

**IN THE UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION**

DENNIS E. REDDY III

Plaintiff,

v.

3M COMPANY, f/k/a Minnesota Mining and Manufacturing Company; AMEREX CORPORATION; ARKEMA, INC.; BUCKEYE FIRE EQUIPMENT; CHEMGUARD, INC.; CHEMOURS COMPANY FC, LLC; CHUBB FIRE, LTD.; CORTEVA, INC.; DU PONT DE NEMOURS INC.; DYNAX CORPORATION; E. I. DU PONT DE NEMOURS & CO.; FIRE-DEX, LLC; GLOBE MANUFACTURING COMPANY LLC; HONEYWELL SAFETY PRODUCTS USA, INC.; JOHNSON CONTROLS, INC.; KIDDE-FENWAL, INC.; KIDDE PLC, INC.; LION GROUP, INC.; MINE SAFETY APPLIANCE COMPANY LLC; NATIONAL FOAM, INC.; PBI PERFORMANCE PRODUCTS, INC., PERIMETER SOLUTIONS, LP; STEDFAST USA, INC.; TEN CATE PROTECTIVE FABRICS USA D/B/A SOUTHERN MILLS INC.; THE CHEMOURS COMPANY L.L.C.; TYCO FIRE PRODUCTS, L.P.; UNITED TECHNOLOGIES CORPORATION; UTC FIRE & SECURITY AMERICAS CORPORATION, INC., and W. L. GORE & ASSOCIATES, INC.

Defendants.

2:23-cv-02271-RMG

MDL NO. 2873

Master Docket No: 21-mn-2873

JUDGE RICHARD GERGEL

COMPLAINT AND JURY DEMAND

NOW COMES, the Plaintiff, by and through undersigned counsel, and alleges upon information and belief as follows:

INTRODUCTION

1. Plaintiff is a firefighter who served the town of Duxbury, Massachusetts as a firefighter for over thirty years.

2. Plaintiff brings this action for monetary damages for harm resulting from exposure to per- and polyfluoroalkyl substances (“PFAS”) that were manufactured, designed, sold, supplied, distributed and/or contained in products manufactured, designed, sold, supplied and/or distributed by each of the Defendants, individually or through their predecessors or subsidiaries.

3. PFAS are human-made chemicals consisting of a chain of carbon and fluorine atoms used in manufactured products to, *inter alia*, resist and repel oil, stains, heat, and water. PFAS include “long-chain” PFAS made up of seven or more carbon atoms (“long-chain PFAS”) as well as “short-chain” PFAS made up of six or fewer carbon atoms (“short-chain PFAS”).

4. PFAS are known as “forever chemicals” because they are immune to degradation, bio-accumulate in individual organisms and humans, and increase in concentration up the food chain. PFAS exposure to humans can occur through inhalation, ingestion, and dermal contact.¹

5. PFAS have been associated with multiple and serious adverse health effects in humans including cancer, tumors, liver damage, immune system and endocrine disorders, high cholesterol, thyroid disease, ulcerative colitis, birth defects, decreased fertility, and pregnancy-induced hypertension. PFAS have also been found to concentrate in human blood, bones, and organs and, most recently, to reduce the effectiveness of vaccines, a significant concern in light of COVID-19.

6. Unbeknownst to Plaintiff, Defendants have manufactured, marketed, distributed,

¹ Suzanne E. Fenton, MS, PhD, *PFAS Collection*, *Environmental Health Perspectives* (February 22, 2019), <https://ehp.niehs.nih.gov/curated-collections/pfas>.

sold, or used PFAS and PFAS-containing materials in protective clothing specifically designed for firefighters (“turnouts”) and in Class B firefighting foams (“Class B foam”).²

7. For decades, Defendants were aware of the toxic nature of PFAS and the harmful impact these substances have on human health. Yet, Defendants manufactured, designed, marketed, sold, supplied, or distributed PFAS and PFAS chemical feedstock,³ as well PFAS-containing turnouts and Class B foam, to firefighting training facilities and fire departments nationally, including in Massachusetts and in the Duxbury fire department. Defendants did so, moreover, without ever informing firefighters or the public that turnouts and Class B foams contained PFAS, and without warning firefighters or the public of the substantial and serious health injuries that can result from exposure to PFAS or PFAS-containing materials.

8. The Firefighter Plaintiff wore turnouts and used Class B foam in the usual and normal course of performing his firefighting duties and training and were repeatedly exposed to PFAS in their workplace. They did not know and, in the exercise of reasonable diligence, could not have known that these products contained PFAS or PFAS-containing materials. They also did not know that PFAS was in their bodies and blood.

9. At all relevant times and continuing to the present, Defendants have represented that their turnouts and Class B foams are safe.

10. The Firefighter Plaintiff used the turnouts and Class B foam as they were intended and in a foreseeable manner which exposed them to PFAS during firefighting activities. This

²Class B foams are synthetic “soap-like” foams that spread rapidly across the surface of a fuel or chemical fire to stop the formation of flammable vapors. The most common Class B foam is aqueous film-forming foam (or “AFFF”).

³Chemical feedstock refers to a chemical used to support a large-scale chemical reaction. The PFAS chemicals utilized to manufacture products containing PFAS are generally referred to herein as “chemical feedstock.”

repeated and extensive exposure to PFAS resulted in cancers and other serious and life-threatening diseases to the Firefighter Plaintiff. Their PFAS exposures continue to pose a significant threat to their personal health due to PFAS' persistence, pervasiveness, toxicity, and bioaccumulation.

11. Defendants knowingly and willfully manufactured, designed, marketed, sold, and distributed chemicals and/or products containing PFAS for use within the Commonwealth of Massachusetts when they knew or reasonably should have known that the Firefighter Plaintiff would repeatedly inhale, ingest and/or have dermal contact with these harmful compounds during firefighting training exercises and in firefighting emergencies, and that such exposure would threaten the health and welfare of firefighters exposed to these dangerous and hazardous chemicals.

12. Plaintiff brings this action against Defendants and seek damages, together with any appropriate injunctive or other equitable relief.

PARTIES

13. DENNIS E. REDDY, III ("Plaintiff") is a resident and citizen of Kingson, MA. Plaintiff regularly used and was thereby directly exposed to PFAS in his turnout gear and to AFFF in training and to extinguish fires during his working career as a civilian firefighter.

14. Plaintiff was diagnosed with prostate cancer as a result of exposure to Defendants' AFFF and turnout gear products December 8, 2015, at the age of 57.

15. Defendants are designers, marketers, developers, manufacturers, distributors, releasers, instructors, promoters, and sellers of PFAS-containing AFFF and turnout gear products. The following Defendants, at all times relevant to this lawsuit, manufactured, designed, marketed, distributed, released, instructed, promoted and/or otherwise sold (directly or indirectly) PFAS-containing AFFF and turnout gear products to various locations for use in fighting Class B fires

such that each Defendant knew or should have known said products would be delivered to areas for active use by Plaintiff during the course of training and firefighting activities.

16. Defendant, 3M Company, f/k/a Minnesota Mining and Manufacturing Company, ("3M"), is a Delaware corporation and does business throughout the United States, 3M has its principal place of business at 3M Center, St. Paul, Minnesota 55133.

17. 3M designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, promoted, sold and/or otherwise handled and/or used AFFF containing PFAS that are used in firefighting training and response exercises which are the subject of this Complaint.

18. Defendant Amerex Corporation, also known as Alabama Amerex Corporation, ("Amerex") is an Alabama corporation that does business throughout the United States. Amerex has its principal place of business in Trussville, Alabama. Amerex developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

19. Defendant Arkema, Inc. ("Arkema") is a Pennsylvania corporation that does business throughout the United States. Arkema has its principal place of business in King of Prussia, Pennsylvania. Arkema developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

20. Defendant Buckeye Fire Equipment Company ("Buckeye") is an Ohio corporation and does business throughout the United States. Buckeye has its principal place of business at 110 Kings Road, Mountain, North Carolina 28086.

21. Buckeye designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold and/or otherwise handled and/or used AFFF containing PFAS that are used in firefighting training and response exercises which are the subject of this Complaint.

22. Defendant Chemguard, Inc. ("Chemguard") is a Wisconsin corporation and does business throughout the United States. Chemguard has its principal place of business at One Stanton Street, Marinette, Wisconsin 54143.

23. Chemguard designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold and/or otherwise handled and/or used AFFF containing PFAS that are used in firefighting training and response exercises which are the subject of this Complaint.

24. Defendant Chemours Company FC, LLC ("Chemours FC"), is a Delaware corporation and does business throughout the United States. Chemours has its principal place of business at 1007 Market Street, Wilmington, Delaware 19898.

25. Chemours FC designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

26. Defendant Chubb Fire, Ltd. ("Chubb") is a foreign private limited company, with offices at Littleton Road, Ashford, Middlesex, United Kingdom TW15 1TZ. Upon information and belief, Chubb is registered in the United Kingdom with a registered number of 134210. Upon information and belief, Chubb is or has been composed of different subsidiaries and/or divisions, including but not limited to, Chubb Fire & Security Ltd., Chubb Security, PLC, Red Hawk Fire & Security, LLC, and/or Chubb National Foam, Inc.

27. Chubb Fire designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

28. Defendant Corteva, Inc. ("Corteva") is a Delaware Corporation that conducts business throughout the United States. Its principal place of business is 974 Center Rd, Wilmington, Delaware 19805.

29. Corteva designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

30. Defendant Du Pont de Nemours Inc. (f/k/a DowDuPont, Inc.) ("DowDuPont"), is a Delaware corporation and does business throughout the United States. DowDuPont, has its principal place of business at 974 Centre Road, Wilmington, Delaware 19805 and 2211 H.H. Dow Way, Midland, Michigan 48674.

31. DowDuPont developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

32. Defendant Dynax Corporation ("Dynax") is a Delaware Corporation that conducts business throughout the United States. Its principal place of business is 103 Fairview Park Drive, Elmsford, New York, 10523-1544.

33. Dynax designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

34. Defendant E. I. du Pont de Nemours and Company (“DuPont”) is a Delaware corporation and does business throughout the United States. DuPont has its principal place of business at 1007 Market Street, Wilmington, Delaware 19898.

35. DuPont designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

36. Defendant Fire-Dex, LLC (“Fire-Dex”) is a Delaware corporation that does business throughout the United States. Fire-Dex has its principal place of business in Medina, Ohio. Fire-Dex developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

37. Defendant Globe Manufacturing Company, LLC (“Globe”) is a New Hampshire corporation that does business throughout the United States, including conducting business in Massachusetts. Globe has its principal place of business in Pittsfield, New Hampshire. Globe developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

38. Defendant Honeywell Safety Products USA, Inc. (“Honeywell”) is a Delaware corporation that does business throughout the United States, including conducting business in Massachusetts. Honeywell has its principal place of business in Charlotte, North Carolina. Honeywell developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

39. Defendant Johnson Controls, Inc. ("Johnson Controls") is a Delaware corporation that does business throughout the United States, including conducting business in Massachusetts. Johnson Controls has its principal place of business in Milwaukee, Wisconsin. Johnson Controls is the parent of Defendants Tyco Fire Products, LP and Chemguard, Inc. Johnson Controls developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

40. Defendant Kidde-Fenwal, Inc. ("Kidde-Fenwal") is a corporation organized under the laws of the State of Delaware and does business throughout the United States. Kidde-Fenwal has its principal place of business at One Financial Plaza, Hartford, Connecticut 06101. Kidde-Fenwal is the successor- in-interest to Kidde Fire Fighting, Inc. (f/k/a Chubb National Foam, Inc. 11k/a National Foam System, Inc.) (collectively, "Kidde/Kidde Fire").

41. Kidde-Fenwal designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

42. Defendant Kidde PLC, Inc. ("Kidde PLC") is a foreign corporation organized and existing under the laws of the State of Delaware and does business throughout the United States. Kidde P.LC. has its principal place of business at One Carrier Place, Farmington, Connecticut 06034. Upon information and belief, Kidde PLC was formerly known as Williams Holdings, Inc. and/or Williams US, Inc.

43. Kidde PLC designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

44. Defendant Lion Group, Inc., ("Lion") is an Ohio corporation that does business throughout the United States, including conducting business in Massachusetts. Lion has its principal place of business in Dayton, Ohio. Lion developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

45. Defendant Mine Safety Appliance Company, LLC ("MSA/Globe") is a Pennsylvania corporation that does business throughout the United States, including conducting business in Massachusetts. MSA has its principal place of business in Cranberry Township, Pennsylvania. MSA acquired Globe Holding Company, LLC, and its subsidiaries (collectively, "MSA/Globe") in 2017 and continues to do business under the Globe name. MSA developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

46. Defendant National Foam, Inc. ("National Foam") is a Delaware corporation and does business throughout the United States. National Foam has its principal place of business at 350 East Union Street, West Chester, Pennsylvania 19382.

47. National Foam designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold and/or otherwise handled and/or used AFFF containing PFAS that are used in firefighting training and response exercises which are the subject of this Complaint.

48. Defendant PBI Performance Products, Inc., ("PBI") is a Delaware corporation that does business throughout the United States. PBI has its principal place of business in Charlotte, North Carolina. PBI developed, manufactured, marketed, distributed, released, sold, and/or used

PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

49. Defendant Perimeter Solutions, LP, ("Perimeter Solutions") is a Delaware corporation that does business throughout the United States. Perimeter Solutions has a principal place of business in Rancho Cucamonga, California. Perimeter developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

50. Defendant StedFast USA, Inc. ("StedFast") is a Delaware corporation that does business throughout the United States. StedFast has its principal place of business in Piney Flats, Tennessee. StedFast developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

51. Defendant Ten Cate Protective Fabrics USA d/b/a Southern Mills, Inc. ("Tencate") is a Georgia corporation that does business throughout the United States. Tencate has its principal place of business in Senoia, Georgia. Tencate developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

52. Defendant The Chemours Company ("Chemours"), is a Delaware corporation and does business throughout the United States. Chemours has its principal place of business at 1007 Market Street, Wilmington, Delaware 19898.

53. Chemours designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

54. Defendant Tyco Fire Products, LP, as successor-in-interest to The Ansul Company ("Tyco"), is a Delaware limited partnership and does business throughout the United States. Tyco has its principal place of business at One Stanton Street, Marinette, Wisconsin 54143. Tyco manufactured and currently manufactures the Ansul brand of products, including Ansul brand AFFF containing PFAS.

55. Tyco is the successor in interest to the corporation formerly known as The Ansul Company ("Ansul"). At all times relevant, Tyco/Ansul designed, marketed, developed, manufactured, distributed released, trained users, produced instructional materials, sold and/or otherwise handled and/or used AFFF containing PFAS that are used in firefighting training and response exercises which are the subject of this Complaint.

56. Defendant United Technologies Corporation ("United Technologies") is a foreign corporation organized and existing under the laws of the State of Delaware and does business throughout the United States. United Technologies has its principal place of business at 8 Farm Springs Road, Farmington, Connecticut 06032.

57. United Technologies designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

58. Defendant UTC Fire & Security Americas Corporation, Inc. (f/k/a GE Interlogix, Inc.) ("UTC") is a North Carolina corporation and does business throughout the United States. UTC has its principal place of business at 3211 Progress Drive, Lincolnton, North Carolina 28092. Upon information and belief, Kidde-Fenwal, Inc. is part of the UTC Climate Control & Security unit of United Technologies Corporation.

59. UTC designed, marketed, developed, manufactured, distributed, released, trained users, produced instructional materials, sold, and/or otherwise handled and/or used AFFF containing PFAS that are the subject of this Complaint.

60. Defendant W. L. Gore & Associates, Inc., ("Gore") is a Delaware corporation that does business throughout the United States. Gore has its principal place of business in Newark, Delaware. Gore developed, manufactured, marketed, distributed, released, sold, and/or used PFAS, PFAS materials, and products containing PFAS in turnouts and/or Class B foams, including in Massachusetts.

61. When reference is made in this Complaint to any act or omission of any of the Defendants, it shall be deemed that the officers, directors, agents, employees, or representatives of the Defendants committed or authorized such act or omission, or failed to adequately supervise or properly control or direct their employees while engaged in the management, direction, operation, or control of the affairs of Defendants, and did so while acting within the scope of their duties, employment or agency.

62. The term "Defendant" or "Defendants" refers to all Defendants named herein jointly and severally, unless otherwise stated.

JURISDICTION AND VENUE

63. The jurisdiction of this Court is invoked pursuant to 28 U.S.C. §1332(a)(1), because the Plaintiff and Defendants are citizens of different states and the amount in controversy exceeds \$75,000.00, excluding interest and costs.

64. Venue is proper in this District Court pursuant to this Court's Case Management Order ("CMO") No. 3. Plaintiff states that but for the Order permitting direct filing in the United States District Court for the District of South Carolina, Plaintiff would have filed this Complaint

in the United States District Court for the Eastern District of Massachusetts. Further, in accordance with CMO 3, Plaintiff designates the United States District Court for the Eastern District of Massachusetts as the home venue. Venue is originally proper in the District Court pursuant to 28 U.S.C. §1391 because it is the judicial district in which Plaintiff was a resident and/or citizen, a substantial part of the events or omissions giving rise to the claims occurred, and Defendants conduct business within the district.

FACTUAL ALLEGATIONS

65. The Firefighter Plaintiff's Use of and Exposure to PFAS-Containing Products.
66. The Firefighter Plaintiff served the town Duxbury as a firefighter and worked at Central Fire Station and Ashdod Fire Station for over thirty years.
67. As first responders to fire, medical and other emergency calls, the Firefighter Plaintiff risked his life daily. He not only saves lives and property, but he also provided emergency services and medical care, performed rescues, and offered support to people in traumatic circumstances. To prepare them for this enormously challenging work, the Firefighter Plaintiff wore turnouts/bunker gear and received extensive and ongoing training in fire suppression (including the preparation, handling, and use of firefighting foam), fire prevention, rescue, and emergency medical care techniques to protect and/or minimize the loss of life, property, and damage to the environment.
68. The Duxbury Fire Department maintains two stations which provide fire protection and emergency response services to the Duxbury community, serving a population of 1,426 people.
69. For decades, Defendants, either individually or through their predecessors or subsidiaries, have manufactured, designed, sold, supplied, and distributed chemical feedstock and/or turnouts and/or Class B foam containing PFAS to firefighting training facilities and fire

departments globally, including within the Commonwealth of Massachusetts and town of Duxbury and its neighboring communities in Massachusetts.

70. With over 5,000 individual chemicals, PFAS is a large and ever-growing category of human-made chemicals, consisting of a nearly indestructible chain of carbon and fluorine atoms that are widely used in products to, inter alia, resist and repel oil, heat, and water, and have been found to have negative health effects. As detailed below, these toxic chemicals are present in firefighter turnouts and Class B foam.

PFAS-Containing Turnout Gear

71. During firefighting training and when responding to fires and performing fire extinguishment, firefighters wear turnouts that are intended to provide a degree of thermal, chemical, and biological protection for a firefighter. Turnout gear components include individual components such as a helmet, hood, jacket, pants and suspenders, boots, and gloves. Each component of the jacket and pants are made of an outer layer, as well as several inner layers that include a moisture barrier and thermal liner which are meant to protect the firefighter from ambient heat.⁴

72. PFAS chemicals are used in turnout gear to impart heat, water, and stain resistance to the outer shell and moisture barrier of turnout gear.

73. A June 2020 study of turnout gear by researchers at the University of Notre Dame analyzed 30 new and used turnout jackets and pants originally marketed, distributed and sold in 2008, 2014, and 2017, by six turnout gear makers, including Defendants MSA/Globe, Lion and Honeywell and found high levels of PFAS in turnout gear worn, used, or handled by firefighters,

⁴ *What Materials Go Into Making Turnout Gear?*, Globe MSA Safety Website, (last visited September 29, 2021), <https://globe.msasafety.com/selecting-your-gear/materials>.

including the Firefighter Plaintiff.⁵ When exposed to heat, PFAS chemicals in the turnouts off-gas, break down, and degrade into highly mobile and toxic particles and dust,⁶ exposing firefighters to PFAS chemicals, particles and dust, including through skin contact/absorption, ingestion (e.g., hand-to-mouth contact) and/or inhalation.⁷ Further firefighter exposure to these highly mobile and toxic materials occurs through normal workplace activities, because particles or dust from their turnouts spread to fire vehicles and fire stations, as well as firefighters' personal vehicles and homes.⁸

74. Such workplace exposure to PFAS or PFAS-containing materials has been found to be toxic to humans. As far back as a July 31, 1980 internal memo, DuPont officials described measures that were needed to prevent workplace exposure to PFOA, which they knew could permeate all protective materials, and noted that PFOA's toxicity varied depending on the exposure pathway, acknowledging that ingestion was "slightly toxic," dermal contact was "slightly to moderately toxic" and inhalation was "highly toxic."⁹ The memo concluded "continued exposure is not tolerable."¹⁰

75. In another article published in the journal of Environmental Research in January 2023, the authors reviewed all of the studies about firefighters and their exposure to PFASs. The authors determined that firefighters were exposed to PFAS through, *inter alia*, skin contact and

⁵ Graham Peaslee et al., *Another Pathway for Firefighter Exposure to Per- and Polyfluoroalkyl Substances: Firefighter Textiles*, Environmental Science & Technology Letters 2020, 7, 8, 594-599 (Ecotoxicology and Public Health) (June 23, 2020) (hereinafter, "the Notre Dame Turnout Study").

⁶ A.S. Young et al., *Per- and Polyfluoroalkyl Substances (PFAS) and Total Fluorine in Fire Station Dust*, J. Expo. Sci. Environ. Epidemiology (2021), <https://doi.org/10.1038/s41370-021-00288-7>.

⁷ *Id.*

⁸ *Id.*

⁹ Robert Bilott, *Exposure* (2019), pg. 174.

¹⁰ *Id.*, at pg. 175.

ingestion and inhalation of AFFF and turnout gear.¹¹

76. The authors found that as compared to the general population, firefighters have elevated serum levels of certain long-chain PFAS, which can be reasonably attributed in large part to AFFF.

77. The authors also found that from the cancer types that may be associated with PFAS exposure, studies on cancer risk among firefighters have shown an elevated risk for thyroid, kidney, bladder, testicular, prostate and colon cancer.

78. As alleged herein, the Firefighter Plaintiff wears and/or wore turnouts in the ordinary course of performing their duties, as the turnouts were intended to be used and in a foreseeable manner, which exposed them to significant levels of PFAS.

79. The Firefighter Plaintiff did not know, and in the exercise of reasonable diligence could not have known, that the turnouts they wore or used while performing his duties contained PFAS or PFAS-containing materials, and similarly did not know and could not have known that he routinely suffered exposure to PFAS or PFAS-containing materials in the turnouts he wore or used in performing his duties. The turnout gear worn or used by the Firefighter Plaintiff did not and does not contain labeling information saying that the gear contains PFAS, and similarly did not and does not warn the Firefighter Plaintiff of the health risks associated with exposure to PFAS.

80. Like fire departments across the country, firefighters only had one set of turnouts for years, and would wash their turnouts at home and/or in station machines along with their daily station wear uniforms.

¹¹ Rosenfeld, Paul E., et al., *Perfluoroalkyl substances exposure in firefighters : Sources and implications*, Environmental Research 220 (2023) 115164.

PFAS-Containing Class B Foam

81. Class B foam is one of the primary tools used by firefighters for suppression of fires and is particularly effective for extinguishing fires involving oil and/or chemicals common at transportation accidents, aircraft accidents, and chemical spills. Class B foam is also used in structural or other types of non-chemical fires when water cannot penetrate deeply enough to ensure that unseen fire is extinguished. The most common Class B foam is aqueous film-forming foam (“AFFF”). AFFF and other Class B foams contain PFAS.

82. To use Class B foam, a Class B foam concentrate must first be mixed with water.

83. Class B foam concentrate is typically sold in five-gallon containers that firefighters are responsible for storing on the fire engine and/or pouring into the foam bladder of fire engine. To mix the foam concentrate and water from a fire engine that is not pre-plumbed for foam, an educator must be placed in the foam concentrate to draw up the concentrate and mix it with water to create a thick, foamy substance. Firefighters are responsible for this process of preparing the foam, applying the foam and for cleaning the equipment (hoses, nozzles, etc.) after use.

84. The process of preparing and applying Class B foam, applying the foam, and then cleaning the equipment after foam use causes exposure to PFAS through skin contact, inhalation, or ingestion (e.g., hand-to-mouth contact). The Class B foam containers used by the Firefighter Plaintiff and their fire departments to mix and prepare the Class B foam for use did not say that the foam contains PFAS and did not warn the Firefighter Plaintiff of the serious health risks associated with exposure to PFAS.

85. Class B foam is used in fire extinguishment in a manner typical of routine methods of fire extinguishment—by being sprayed through a fire hose, appliance, or nozzle.

86. The techniques used for “laying a blanket” of Class B foam in fire extinguishment include banking the foam off a wall or vertical surface to agitate the foam before it covers the fire; or applying it to the ground surface where the fire is burning. In structure fires, it can also be necessary to spray the ceilings, walls, and floors. Reapplication of foam is often necessary because the foam blanket will break down over a short time.



87. These techniques are used routinely in firefighting training as well as in real-world fire extinguishment, and result in firefighters being sprayed or entirely soaked with Class B foam, walking in and through Class B foam (which can reach thigh- or even waist-high), or kneeling in Class B foam during use – all as depicted in the exemplar photographs below. As a result, the techniques cause exposure to PFAS through skin contact, inhalation, or ingestion (e.g., hand-to-mouth contact).

88. As alleged herein, the Firefighter Plaintiff used and/or was exposed to Class B foam in the ordinary course of performing his duties as it was intended to be used and in a foreseeable manner which exposed him to significant levels of PFAS.

89. The Firefighter Plaintiff did not know, and in the exercise of reasonable diligence, could not have known that the Class B foam he used and/or was exposed to while performing his duties contained PFAS or PFAS-containing materials, and similarly did not know and could not have known that he routinely suffered exposure to PFAS or PFAS-containing materials in the Class B foam he used and/or was exposed to in performing his duties.



90. These exposures to PFAS or PFAS-containing materials resulted in serious and life-threatening diseases to the Firefighter Plaintiff and continue to pose a significant health threat to him given the bioaccumulation, pervasiveness, and persistence of PFAS.



91. The Chemical Structure of PFAS Makes Them Harmful to Human Health.

92. PFAS are known as “forever chemicals” because they are immune to degradation, bio-accumulate in individual organisms and humans, and increase in concentration up the food chain.¹² Indeed, scientists are unable to estimate an environmental half-life (i.e. the time it takes for 50% of the chemical to disappear) for PFAS.¹³ Additionally, some PFAS chemicals (known as “precursors”) degrade into different long-chain PFAS chemicals.¹⁴

93. PFAS are nearly indestructible and are highly transportable.¹⁵ PFAS exposure to

¹² *Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)*, National Institute of Environmental Health Sciences (last visited September 30, 2021), <https://www.niehs.nih.gov/health/topics/agents/pfc/index.cfm>.

¹³ *Id.*

¹⁴ *Id.* at fn. 6; Monica Amarelo, Study: *Almost All Fluorine Detected in Fire Stations’ Dust Is From Unknown “Forever Chemicals,”* Environmental Working Group (February 5, 2021), <https://www.ewg.org/release/study-almost-all-fire-stations-dust-unknown-evergreen-chemicals>.

¹⁵ *Toxicological Profile for Perfluoroalkyls*, see Relevance to Public Health, Agency for Toxic Substances & Disease Registry, (last visited October 19, 2021), <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

humans can occur through inhalation, ingestion, or dermal contact.¹⁶

94. PFAS chemicals include “older” long-chain PFAS like PFOA, PFOS, and PFNA that have seven or more carbon atoms, and “newer” short-chain PFAS, like PFBA, PFBS, PFHxA, and PFHxS. The PFAS chemical industry has repeatedly asserted that short-chain PFAS are safer and bio-degrade more easily than long-chain PFAS. However, short-chain PFAS are molecularly similar to long-chain PFAS, and recent scientific research conducted in 2020 shows that short-chain PFAS are in fact extremely persistent, highly mobile and transportable, almost impossible to remove from water, bio-accumulate in humans and the environment, and show similar toxicity as long-chain PFAS.¹⁷ Short-chain PFAS also have lower technical performance and may therefore be used at higher quantities cancelling out any supposed benefits of lower bioaccumulation potential.¹⁸

95. In October 2021, the U.S. Environmental Protection Agency (“EPA”) updated its 2018 assessment of short-chain PFAS, also known as “GenX”, finding that two of Defendant Chemours GenX chemicals are more toxic than PFOA - the highly toxic chemical these were

¹⁶ *Id.* at pgs. 3-4; Katura Persellin, *Study: PFAS Exposure Through Skin Causes Harm Similar to Ingestion*, Environmental Working Group (January 13, 2020).

¹⁷ Cheryl Hogue, *Short-chain and long-chain PFAS show similar toxicity*, US National Toxicology Program says, Chemical and Engineering News, (August 24, 2019), <https://cen.acs.org/environment/persistent-pollutants/Short-chain-long-chain-PFAS/97/i33>; David Andrews, *FDA Studies: ‘Short-Chain’ PFAS Chemicals More Toxic Than Previously Thought*, Environmental Working Group (March 9, 2020), <https://tinyurl.com/y3lbq7by>; Stephan Brendel et al., *Short-chain Perfluoroalkyl Acids: Environmental Concerns and A Regulatory Strategy Under REACH*, Environmental Sciences Europe, Vol. 30, 1 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5834591/>; Tom Neltner, *The Elephant in the Room: Potential Biopersistence of Short-Chain PFAS*, Environmental Defense Fund, (February 20, 2019), <http://blogs.edf.org/health/2019/02/20/potential-biopersistence-short-chain-pfas/>.

¹⁸ Martin Scheringer et al., *Helsingør Statement on Poly- and Perfluorinated Alkyl Substances (PFASs)*, Chemosphere (June 14, 2014), <https://www.sciencedirect.com/science/article/pii/S004565351400678X>.

intended to replace.¹⁹

96. To date, there is no safe, acceptable, or “normal” level of PFAS in the human body. Further, the fact that PFOA, PFOS, PFHxS, PFHpA, and PFNA are often found together presents a substantial risk to human health. Defendants’ assertions that their products are safe because they do not contain PFOA or PFOS, or because they contain short-chain PFAS is just another example of their efforts to deflect from the reality that there are thousands of PFAS – including precursor PFAS which degrade into PFOA and PFOS.²⁰

97. PFAS exposure affects nearly every system in the human body.²¹ It has been associated with multiple and serious adverse health effects in humans including, but not limited to, cancer, tumors, liver damage, immune system and endocrine disorders, thyroid disease, ulcerative colitis, birth defects, decreased fertility, pregnancy-induced hypertension, accelerated changes in gene expression, and increases in oxidative stress which can contribute to DNA changes, tumor promotion, and other health conditions.²² It has also been found to concentrate in human blood, bones and organs, and to reduce the effectiveness of certain vaccines, a significant

¹⁹ Cheryl Hogue, *US EPA Deems Two GenX PFAS Chemicals More Toxic than PFOA*, Chemical & Engineering News (October 28, 2021), <https://cen.acs.org/environment/persistent-pollutants/US-EPA-deems-two-GenX-PFAS-chemicals-more-toxic-than-PFOA/99/i40>.

²⁰ Technical Fact Sheet - Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA), United States Environmental Protection Agency, (Nov. 2017), https://www.epa.gov/sites/production/files/2017-12/documents/ffrrofactsheet_contaminants_pfos_pfoa_11-20-17_508_0.pdf.

²¹ Kelly Lenox, PFAS Senate Hearing, Birnbaum’s Expert Scientific Testimony, Environmental Factor, National Institute of Environmental Health Sciences (May 2019), <https://factor.niehs.nih.gov/2019/5/feature/1-feature-pfas/index.htm>.

²² A. Koskela et al., *Perfluoroalkyl substances in human bone: concentrations in bones and effects on bone cell differentiation*, Scientific Reports, (July 28, 2017), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5533791/pdf/41598_2017_Article_7359.pdf; *National Toxicology Program Technical Report on the Toxicology and Carcinogenesis Studies of Perfluorooctanoic Acid Administered in Feed to Sprague Dawley (Hsd: Sprague Dawley SD) Rats*, National Toxicology Program, (May 2020), https://ntp.niehs.nih.gov/ntp/htdocs/ltr_rpts/tr598_508.pdf; Jaclyn Goodrich et al., *Per- and Polyfluoroalkyl Substances, Epigenetic Age and DNA Methylation: A Cross-Sectional Study of Firefighters*, Epigenomics (October 2021), <https://pubmed.ncbi.nlm.nih.gov/34670402/>.

concern in light of COVID-19.²³

98. Defendants Knowingly Manufactured, Developed, Marketed, Distributed, Supplied and/or Sold Toxic PFAS and/or Products Containing PFAS.

99. Defendants have each marketed, developed, distributed, sold, promoted, manufactured, released, or otherwise used PFAS chemicals in products, including in PFAS-containing turnout gear and Class B foam, throughout the United States and in Massachusetts.

100. PFAS were first developed in the 1930s and 1940s. Soon after, 3M began manufacturing a PFAS material called perfluorooctanoic acid (“PFOA”), selling it to other companies, including DuPont.

101. By the 1950s, PFAS were widely used in large-scale manufacturing. Prior to this, PFAS had never been detected in nor were present in human blood or bodies.

102. In the 1960s, Class B foam containing PFAS entered the global market and became the primary firefighting foam all over the world with 3M as one of the largest manufacturers.

103. In the 1970s, Defendants National Foam and Tyco began to manufacture, market, and sell Class B foam containing PFAS, followed by Defendants Chemguard and Dynax in the 1990s, and Defendant Buckeye in the 2000s.

104. Founded in 1918, Defendant MSA/Globe began manufacturing, marketing, and selling turnout gear with DuPont’s NOMEX® PFAS-containing flame resistant fabric in 1966. MSA/Globe (under the Globe name) continues to manufacture, market, and sell turnout gear using

²³ *Id.* (Koskela study); Tasha Stolber, *PFAS Chemicals Harm the Immune System, Decrease Response to Vaccines, New EWG Review Finds*, Environmental Working Group (November 12, 2020), <https://www.ewg.org/news-and-analysis/2020/11/pfas-chemicals-harm-immune-system-decrease-response-vaccines-new-ewg>.

PFAS-containing fabrics supplied by its partners, DuPont, Gore, Tencate, and PBI.²⁴

105. Defendant Lion began to manufacture, market, and sell turnout gear in 1970. Since its founding, and continuing through to the present, Lion makes, markets, and sells turnout gear using PFAS-containing fabrics, including Teflon® F-PPE-treated thermal lining material supplied by Defendants DuPont's NOMEX® PFAS-containing flame/water/oil-resistant fabric, and moisture barrier fabrics supplied by Defendant Gore.²⁵

106. Defendant Honeywell acquired Norcross Safety Products LLC in 2008, entering the protective gear industry and becoming one of the leading manufacturers of turnouts. Honeywell makes, markets, and sells turnout gear using PFAS-containing fabrics, supplied by Defendants DuPont, Gore, PBI, and StedFast.

Defendants Know Exposure to PFAS Causes Serious Health Impacts

107. Defendants, including specifically 3M and DuPont, have long known about the serious and significant impacts to health caused by exposure to PFAS, having conducted study after study on the exposure and health effects of PFAS on animals, and in some cases, even on their own employees. The findings of these studies were discussed within the companies internally yet were never made public or shared with any regulatory agencies. Among the findings:

- a. A 1950 3M study showed that PFAS could build up in the blood of mice and that PFAS could bind to proteins in human blood suggesting that PFAS would not only remain, but

²⁴ See *Globe History*, Globe MSA Safety Website, (last visited February 26, 2021), <https://globe.msasafety.com/history>; *Turnout Gear Materials*, Globe MSA Safety Website, (last visited February 26, 2021), <https://globe.msasafety.com/materials>.

²⁵ See *Our History*, Lion Website (last visited September 29, 2021), <http://www.lionprotects.com/lion-history>; *Firefighter Turnouts*, Lion Website (last visited September 29, , 2021), <https://www.lionprotects.com/firefighter-turnout-gear>.

also persist and accumulate in the body of the exposed individuals with each additional exposure.²⁶

- b. In 1961, a DuPont toxicologist warned that PFAS chemicals enlarge rat and rabbit livers.²⁷ A year later, these results were replicated in studies with dogs.²⁸
- c. In 1963, 3M's technical handbook classified PFAS as toxic and advised that "due care should be exercised in handling these materials."²⁹
- d. In 1970, a company that purchased 3M's firefighting foam had to abandon a test of the product because all the fish died.³⁰
- e. In the 1970s, DuPont discovered that there were high concentrations of PFOA in the blood samples of factory workers at DuPont's Washington Works site.³¹
- f. By the end of the 1970s, studies performed by, at least 3M, indicated that PFAS materials were resistant to environmental degradation and would persist in the environment.³²
- g. In 1981, 3M, which still supplied PFOA to DuPont and other corporations, found that ingestion of PFOA caused birth defects in rats. 3M reported this information to DuPont. DuPont then tested the children of pregnant employees in their Teflon division and found that of seven births, two children had eye defects. Defendants reassigned the female employees but did not inform the EPA or make this information public.³³
- h. In 1988, a company that purchased PFAS firefighting foam complained to 3M because the product was not biodegradable as 3M represented.³⁴ Subsequently, a 3M employee wrote

²⁶ Timeline - For 50 Years, Polluters Knew PFAS Chemicals Were Dangerous But Hid Risks From Public, Environmental Working Group, (2019), https://static.ewg.org/reports/2019/pfa-timeline/3M-DuPont-Timeline_sm.pdf; see also, <https://www.ewg.org/pfastimeline/>.

²⁷ *Id.*

²⁸ Nathaniel Rich, *The Lawyer Who Became DuPont's Worst Nightmare*, New York Times (June 6, 2016), <https://www.nytimes.com/2016/01/10/magazine/the-lawyer-who-became-duponts-worst-nightmare.html>.

²⁹ *Id.*, at fn. 25.

³⁰ *Id.*

³¹ *Id.*

³² PFCS: Global Contaminants: PFCs Last Forever, Environmental Working Group, (April 3, 2003), <https://www.ewg.org/research/pfcs-global-contaminants/pfcs-last-forever>.

³³ *Id.*, at fn. 25.

³⁴ *The Devil They Knew: PFAS Contamination and the Need for Corporate Accountability, Part II*, Transcript of Hearing Before the Subcommittee on Environment of the Committee on Oversight and Reform, House of Representatives (September 19, 2019),

an internal memo that “3M should stop perpetrating the myth that these fluorochemical surfactants are biodegradable, but the company continued to sell them.”³⁵

- i. By at least the end of the 1980s, research performed by Defendants, including specifically, Defendants 3M and DuPont, manufacturing and/or using PFAS materials indicated that at least one such PFAS material, PFOA, caused testicular tumors in a chronic cancer study in rats, resulting in at least Defendant DuPont classifying such PFAS material internally as a confirmed animal carcinogen and possible human carcinogen.³⁶
- j. In the 1990s, Defendant DuPont knew that PFOA caused cancerous testicular, pancreatic, and liver tumors in lab animals. One study also suggested that PFOA exposure could cause possible DNA damage.³⁷ Another study of workers found a link between PFOA exposure and prostate cancer.³⁸
- k. In response to the alarming and detrimental health impact, DuPont began to develop an alternative to PFOA and in 1993, an internal memo announced that “for the first time, we have a viable candidate” that appeared to be less toxic and showed less bioaccumulation.³⁹ DuPont decided against using this potentially safer alternative, however, because products manufactured with PFOA were worth \$1 billion in annual profit.⁴⁰
- l. On June 30, 2000, 3M and DuPont met to share 3M’s “pertinent data on PFOA”. 3M informed DuPont that the half-life of PFOA was much longer than animal studies showed.⁴¹

108. Additionally, approximately fifty years of studies by Defendants, including by 3M and DuPont, on human exposure to PFAS found unacceptable levels of toxicity and bio-accumulation, as well as a link to increased incidence of liver damage, various cancers, and birth

³⁵ <https://docs.house.gov/meetings/GO/GO28/20190910/109902/HHRG-116-GO28-Transcript-20190910.pdf>.

³⁶ *Id.*

³⁷ *Id.*, at fn. 25.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ Internal DuPont Memorandum, DuPont Haskell Laboratory Visit (June 30, 2000), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1721.pdf>.

defects in humans exposed to PFAS.⁴² These studies also revealed that, once in the body, PFAS has a very long half-life and that it takes years before even one-half of the chemicals begins to be eliminated from the body—assuming, of course, the body experiences no additional PFAS chemical exposure.⁴³

109. In the face of these findings, and despite passage of the Toxic Substances Control Act in 1976, which requires companies that manufacture, process or distribute chemicals to immediately report to the EPA information that “reasonably supports the conclusion” that a chemical presents a substantial risk to health or the environment, Defendants did not inform the EPA, Plaintiff, or the public about the health impacts resulting from exposure to PFAS.⁴⁴ Indeed, in at least some instances, Defendants’ own attorneys advised the companies to conceal their damaging findings on PFAS, which they did for decades.⁴⁵

110. In 2000, 3M announced that it would cease manufacturing a specific PFAS chemical, PFOS, as well as Class B foam, on the same day the EPA announced that PFOA and PFOS, two chemicals in the PFAS family, had a “strong tendency to accumulate in human and animal tissues and could potentially pose a risk to human health and the environment over the long term.”⁴⁶

111. However, 3M did not recall PFOS, its chemical feedstock, or any Class B foam that it had previously manufactured, sold, or distributed, or that was then stored at firehouses and being

⁴² *Id.*, at fn. 25.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*, at fn. 33.

⁴⁶ EPA and 3M Announce Phase Out of PFOS, Press Release, United States Environmental Protection Agency (May 16, 2000), https://archive.epa.gov/epapages/newsroom_archive/newsreleases/33aa946e6cb11f35852568e1005246b4.html.

used by firefighters around the country. And no other Defendant stopped manufacturing PFAS chemicals or products containing PFAS. Rather, Defendants continued to manufacture, develop, market, promote, distribute, and sell PFAS chemicals and PFAS-containing products, including specifically PFAS-containing turnouts, and Class B foams and did so without any warning to firefighters or to the public concerning the fact that these turnouts and foams contained PFAS, or that they posed a serious health risk to human health. Defendants instead continued to claim their products were safe.

112. By the 2000s, Defendants' own research of its employees revealed multiple adverse health effects among workers who had been exposed to PFAS, including increased cancer incidence, hormone changes, lipid changes, and thyroid and liver impacts.⁴⁷

113. In 2001, a class action lawsuit was filed in West Virginia against DuPont on behalf of people whose water had been contaminated by the nearby DuPont chemical plant where PFAS chemicals were manufactured.

114. Defendants continued to manufacture, market, promote, distribute, and sell PFAS and PFAS-containing products, including turnouts and Class B foam, and continued to publicly claim that these products were safe. Defendants affirmatively suppressed independent research on PFAS, and instead commissioned research and white papers to support their claims that PFAS and PFAS-containing products were safe to use, engaging consultants to further this strategy and ensure that they would continue to profit from these toxic chemicals and products.

115. As one consultant wrote in pitching its services to DuPont, it was critical that the PFAS industry develop an aggressive strategy to “[discourage] governmental agencies, the plaintiffs’ bar and misguided environmental groups” and “[implement] a strategy to limit the effect

⁴⁷ *Id.*, at fn. 25.

of litigation and regulation on the revenue stream generated by PFOA.” The strategy was further described by consultant as follows:

DUPONT MUST SHAPE THE DEBATE AT ALL LEVELS. . . .The outcome of this process will result in the preparation of a multifaceted plan to take control of the ongoing risk assessment by the EPA, looming regulatory challenges, likely litigation, and almost certain medical monitoring hurdles. The primary focus of this endeavor is to strive to create the climate and conditions that will obviate, or at the very least, minimize ongoing litigation and contemplated regulation relating to PFOA. This would include facilitating the publication of papers and articles dispelling the alleged nexus between PFOA and teratogenicity as well as other claimed harm. We would also lay the foundation for creating Daubert precedent to discourage additional lawsuits.⁴⁸

116. Class B foam manufacturers and distributors adopted a similarly aggressive industry campaign to evade government oversight or public attention of the risks posed by their products. At a March 2001 meeting of the National Fire Protection Association’s Technical Meeting on Foam, which included Defendant Class B foam manufacturers Tyco, Chemguard and National Foam, a 3M representative informed attendees that 3M had discontinued its Class B foam business, citing concerns about the “proven pervasiveness, persistence and toxicity” of PFOS.⁴⁹ Attendees also were informed of evidence that telomer-based fluorosurfactants (used by every Class B foam manufacture except 3M) degrade to PFOA and, worse, exhibit an even greater degree of pervasiveness and toxicity than PFOA.

117. On or about the same time, certain Defendants, including at least Tyco, DuPont, Dynax and Buckeye, founded and/or became members of the Fire Fighting Foam Coalition (“FFFC”) – a non-profit organization of manufacturers, distributors, and suppliers of Class B foam

⁴⁸ Letter from P. Terrence Gaffney, Esq of The Weinberg Group to Jane Brooks, Vice President, Special Initiatives, DuPont de Nemours & Company, regarding PFOA (April 29, 2003).

⁴⁹ NFPA-11 Technical Committee Meeting Notes (National Fire Protection Association for Standards on Low-, Medium- and High-Expansion Foam) (March 14-15, 2001), <https://assets.documentcloud.org/documents/4178280/NFPA-Schedule.pdf>.

(specifically AFFF). The FFFC's self-described role was to be "the environmental voice for users and manufacturers of AFFF"⁵⁰ – one designed to ignore the health impacts of exposure to PFAS-containing Class B foams such as AFFF:

Not too long ago, 3M had environmental concerns about a chemical in their product and decided to withdraw from the AFFF market. Even though no other manufacturers used the questionable chemical, the withdrawal of 3M from AFFF production raised a red flag. As a direct result, a lot of half-truths and misinformation published by some well-meaning, but misinformed, groups began to surface. One organization went so far as to label our products as "hazardous waste" and as posing an "occupational health or environmental hazard." At the same time, the Federal government was focusing its attention on the industry and needed to identify an industry representative that could provide fact-based information and serve as a focal point for dialogue. We decided, therefore, to form the FFFC in order to educate, inform and help persuade regulatory and legislative decision-makers that firefighting foams are a value-added component to any firefighting capability.⁵¹

118. Defendants also pivoted with a new industry strategy. Defendants continued to produce Class B foams containing PFAS and continued to publicly represent that PFAS and/or products containing PFAS were safe, while developing newer, "short-chain" PFAS alternatives.

119. In 2005, the EPA fined DuPont \$16.5 million for failing to submit decades of toxicity studies of PFOA (one PFAS chemical manufactured by the company).⁵² In the face of and undeterred by the EPA's action, Defendant turnout manufacturers, such as MSA (Globe) and Lion, partnered with DuPont and with Defendant Gore to develop, manufacture, market, distribute

⁵⁰ Fire Fighting Foam Council Website (last visited September 29, 2021), <https://www.ffffc.org/afff-update>.

⁵¹ *Id.* at <https://web.archive.org/web/20020811142253/http://www.ffffc.org/about.html> (captured August 11, 2002).

⁵² Michael Janofsky, *DuPont to Pay \$16.5 Million for Unreported Risks*, New York Times (December 5, 2005), <https://www.nytimes.com/2005/12/15/politics/dupont-to-pay-165-millionLion-for-unreported-risks.html>.

and/or sell turnouts made with DuPont's and/or Gore's PFAS-based textile coatings (e.g., Nomex® and Gore® Protective Fabrics).⁵³

120. In 2006, the EPA "invited" eight PFOA manufacturers, including Defendants DuPont, 3M, and Arkema to join in a "Global Stewardship Program" and phase out production of PFOA by 2015.⁵⁴

121. By this time, Defendants had begun to aggressively manufacture, market and/or distribute short-chain PFAS, such as Gen X, claiming that these alternative PFAS chemicals did not pose significant health risks to humans or the environment. But, these claims, too, were false. Defendants knew that certain of these short-chain PFAS chemicals had been found in human blood, and that at least one of them produces the same types of cancerous tumors (testicular, liver, and pancreatic) in rats as had been found in long-chain PFAS studies.⁵⁵

122. In 2011, a C8 Science Panel convened as part of a settlement in the West Virginia DuPont water contamination case described in paragraph 117, above, began releasing its findings. The Panel had analyzed the blood serum of nearly 70,000 residents living in the water contamination area for two long-chain PFAS (PFOA and PFOS), and found significant negative human health effects (including, kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, high cholesterol, and preeclampsia) associated with exposure to these PFAS chemicals in

⁵³ *DuPont and Lion Collaborate to Better Protect Firefighters and First Responders*, Press Release, DuPont and Lion (January 30, 2013), https://www.prweb.com/releases/dupont_protection_tech/lion_turnout_gear/prweb10362363.htm; Our Partners, Globe Website (last visited February 26, 2021), <https://globe.msasafety.com/our-partners>; and Firefighter & Emergency Response Protection, DuPont Website (last visited February 26, 2021), <https://www.dupont.com/personal-protection/firefighter-protection.html>.

⁵⁴ *PFOA Stewardship Program*, United States Environmental Protection Agency (last visited September 29, 2021), <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfas#tab-3>.

⁵⁵ Sharon Lerner, *New Teflon Toxin Causes Cancer in Lab Animals*, The Intercept (March 3, 2016), <https://theintercept.com/2016/03/03/new-teflon-toxin-causes-cancer-in-lab-animals/>.

the area groundwater.

123. In 2013, DuPont entered an agreement with the EPA and ceased production and use of PFOA – just one of thousands of PFAS chemicals the company makes, promotes, and sells. Defendants, however, continued manufacturing short-chain PFAS materials, chemical feedstock, and products—all the while peddling them as safer, and as more easily bio-degraded than long-chain PFAS, despite evidence to the contrary.⁵⁶

124. In 2015, DuPont spun-off its PFAS chemicals business, as well as two-thirds of its environmental liabilities and 90% of its active litigation, to Defendant Chemours. As part of the transaction, DuPont required Chemours to indemnify the “new” DuPont for all assigned environmental liabilities should a regulatory agency or plaintiff seek to hold the “new” DuPont accountable. As Chemours President Paul Kirsch testified before Congress: “DuPont designed the separation of Chemours to create a company where it could dump its liabilities to protect itself from environmental cleanup and related responsibilities.”⁵⁷

125. In June 2018, the Agency for Toxic Substances and Disease Registry (ASTDR), a division of the Centers for Disease Control and Prevention at the US Department of Health and Human Services released an 852-page draft toxicology report analyzing scientific data about the most common PFAS chemical variants, finding that PFAS “are potentially more hazardous than previously known, are particularly concerning because of these compounds’ persistence in the environment and widespread prevalence—PFAS are extremely slow to biodegrade.”⁵⁸

⁵⁶ *Id.*, at fn. 17, see Tom Neltner, <http://blogs.edf.org/health/2019/02/20/potential-biopersistence-short-chain-pfas/>.

⁵⁷ *Id.*, at fn. 34.

⁵⁸ A Toxic Threat: Government Must Act Now on PFAS Contamination at Military Bases, Center for Science and Democracy (September 2018), <https://www.ucsusa.org/sites/default/files/attach/2018/09/a-toxic-threat-pfs-military-fact-sheet-ucs-2018.pdf>.

126. In September 2019, DuPont chief operations and engineering officer Daryl Roberts testified before Congress that the “new DuPont” (to be distinguished from the “old DuPont” which manufactured and sold PFAS for decades before being spun-off to Chemours) no longer uses or manufactures PFAS and is no longer responsible for obligations and harms resulting from over 65 years of producing PFAS.⁵⁹ Roberts remarked that he knew nothing about “old DuPont’s” efforts to suppress research on PFAS’ toxicity - as testified to by one of DuPont’s former scientists only a few days earlier.⁶⁰ Finally, he stated that any liabilities from “old DuPont’s” PFAS operations were now Chemours’ problem because DuPont is essentially a completely new company with no past – only a bright future of doing good in the world.⁶¹

Defendants Failed to Warn Plaintiff of the Dangers of Exposure to PFAS and Falsely Represented That Their PFAS Products Were Safe

127. As alleged above, Defendants knew that PFAS are persistent, toxic, and bio-accumulating with a very long half-life. They knew that exposure to PFAS can cause serious and life-threatening diseases, including cancer.

128. Yet, Defendants did not warn Plaintiff that PFAS and Defendants’ PFAS-containing products, including turnouts and Class B foams used by the Firefighter Plaintiff, contained PFAS, or that exposure to PFAS in the normal and intended use of such products, causes serious bodily harm and illnesses, including cancer.

129. Instead, Defendants falsely represented—and continue to falsely represent—that PFAS and PFAS-containing products, including turnouts and Class B foams, are safe and not harmful to humans or the environment.

⁵⁹ *Id.*, at fn. 34.

⁶⁰ *Id.*

⁶¹ *Id.*

130. Such assertions fly in the face of science and a global movement toward eliminating this class of chemicals from consumer products. In 2020, for example, Congress passed legislation to address PFAS in turnouts and foam,⁶² and numerous states have severely restricted and/or banned PFAS-containing firefighting foam. For example, California will also require sellers of turnout gear to notify purchasers if it contains PFAS while Colorado has banned PFAS-containing turnouts as of 2022.⁶³ The U.S. Food and Drug Administration similarly has called for phasing out of short-chain PFAS that contain 6:2 fluorotelomer alcohol (6:2 FTOH).⁶⁴ And private companies like Home Depot, Lowes and Staples recently have begun to discontinue selling products containing any PFAS, as have several outdoor, durable clothing companies (e.g. Columbia and Marmot), clothing retailers (e.g. H&M, Levi Strauss & Co), shoe companies (e.g. Adidas and New Balance), car seat manufacturers (e.g. Britax and Graco), furniture companies (e.g. IKEA), personal care companies (e.g. Johnson & Johnson and Oral-B), and textile manufacturing companies.⁶⁵

⁶² Ryan Woodward, *Congress Passes Legislation to Address PFAS Chemicals Impacting Firefighters, Fire Rescue 1*, (December 17, 2020), <https://www.firerescue1.com/legislation-funding/articles/congress-passes-legislation-to-address-pfas-chemicals-impacting-firefighters-Sp8MFif5dAbD4ZrI/>.

⁶³ Andrew Wallender, *Toxic Firefighting Foam With PFAS Scrutinized by Multiple States*, Bloomberg Law (June 18, 2020), <https://news.bloomberglaw.com/pfas-project/toxic-firefighting-foam-with-pfas-scrutinized-by-multiple-states>; Cheryl Hogue, California Bans PFAS Firefighting Foams, Chemical & Engineering News (October 1, 2020), <https://cen.acs.org/environment/persistent-pollutants/California-bans-PFAS-firefighting-foams/98/i3#:~:text=California%20is%20halting%20the%20sale,US%20market%20to%20do%20so>; Marianne Goodland, While Dozens of Bills Are Getting Axed, A Bill on Firefighting Chemicals Sails On, Colorado Politics (May 28, 2020), https://www.coloradolitics.com/legislature/while-dozens-of-bills-are-getting-axed-a-bill-on-firefighting-chemicals-sails-on/article_1b1e05f2-a11e-11ea-a270-230a36e06594.html; Legislature Takes Strongest Stand Yet to Phase out PFAS in Firefighting Foam, Washington State Council of Fire Fighters (March 5, 2020), <https://www.wscff.org/legislature-takes-strongest-stand-yet-to-phase-out-pfas-in-firefighting-foam/>;

⁶⁴ FDA Announces the Voluntary Phase-Out by Industry of Certain PFAS Used in Food Packaging, U.S. Food and Drug Administration, July 31, 2020, <https://www.fda.gov/food/cfsan-constituent-updates/fda-announces-voluntary-phase-out-industry-certain-pfas-used-food-packaging>.

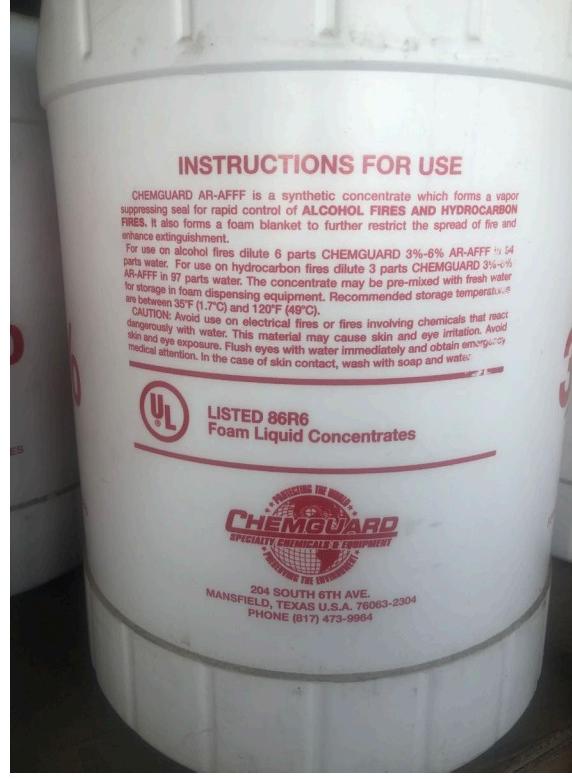
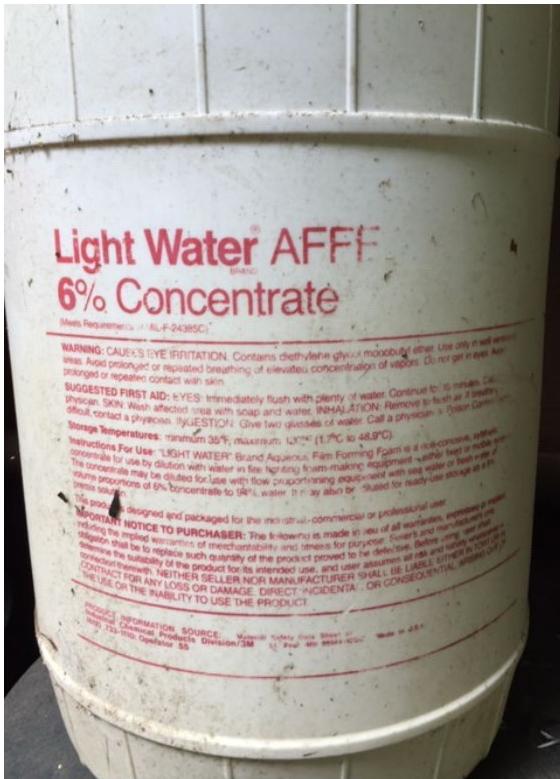
⁶⁵ Muhanad Malas, *Home Depot, Lowe's and Staples Take Action to Protect Their Customers from PFAS and Other Harmful Toxics Lurking in Carpets and Office Supplies*, Environmental Defense (November 5,

Defendants Provide No Safety Warnings on Product Labels

131. Plaintiff alleges that the packaging on the PFAS-containing Class B foam containers used for mixing Class B foam with water, pumping the mixture into engines, and for spraying and laying foam blankets for fire suppression or fire suppression training, contained no warning that the Class B foam contained PFAS. Nor did it inform persons handling or using the foam as it was intended to be handled that such use can result in exposure to PFAS and serious bodily harm.

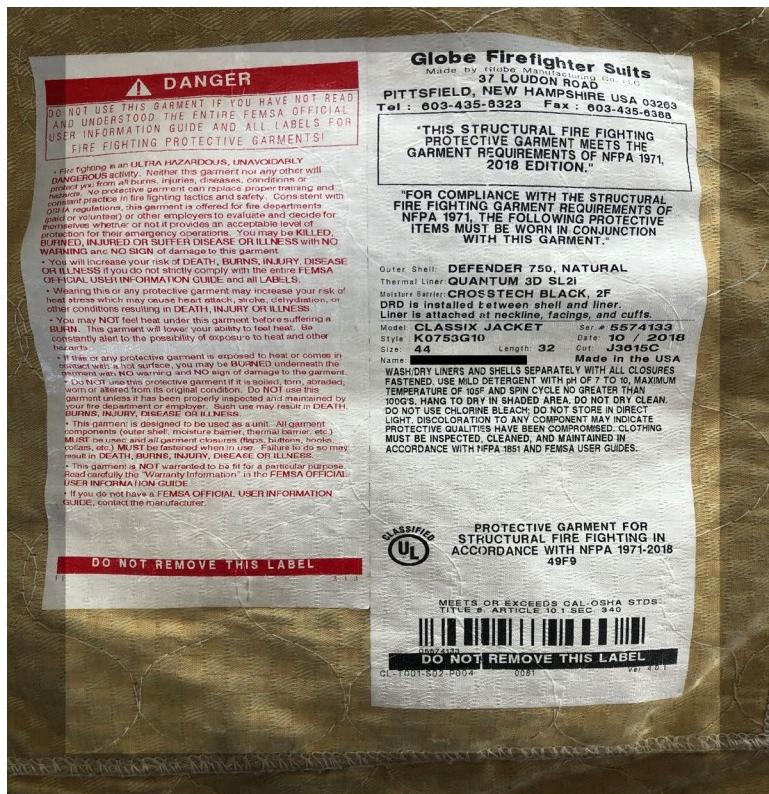
132. Below are photos typical of the Class B foam containers manufactured, marketed, distributed, or sold by Defendants in Massachusetts that Firefighter Plaintiff used in training or in fire suppression during their firefighting careers. The labels on the containers warn only of possible skin or eye irritation and suggest rinsing areas of contact with water. They contain no information about the Class B foam containing PFAS or PFAS-containing materials and provide no warning whatsoever of the human health risks and serious health conditions associated with PFAS exposure resulting from the normal and intended use of Class B foam in fire suppression or fire suppression training.

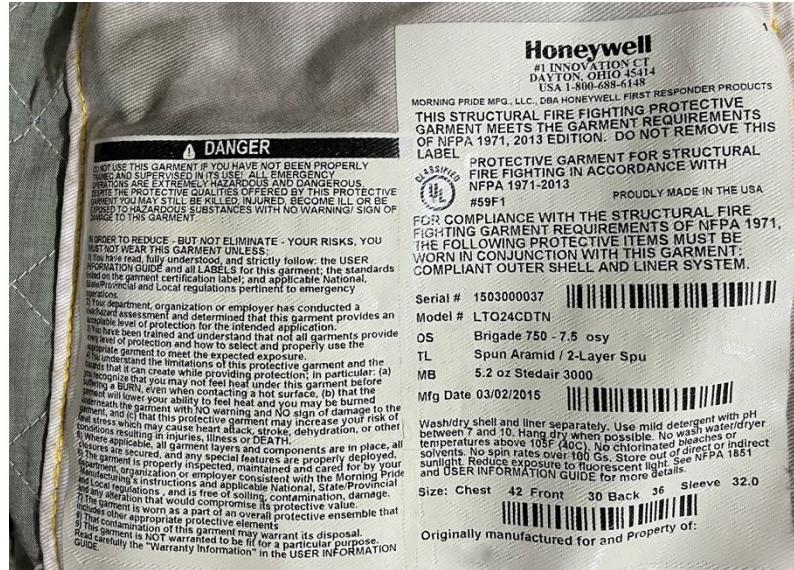
2019), <https://environmentaldefence.ca/2019/11/05/home-depot-lowes-staples-protect-customers-toxics/>; PFAS-Free Products, PFAS Central, (last visited February 15, 2021), <https://pfascentral.org/pfas-free-products/>.



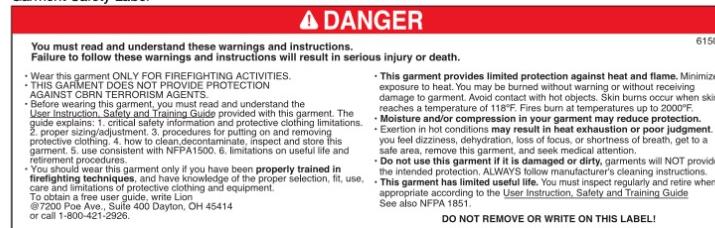
133. Plaintiff further alleges that turnouts containing PFAS or PFAS materials sold by Defendants in Massachusetts, and used by the Firefighter Plaintiff in training, emergency incidents, or in fire suppression during his firefighting career, also contained no warning that the turnouts contain PFAS or PFAS materials. Nor did these labels inform persons handling, wearing, or using the turnouts as they were intended to be handled, worn, or used can result in exposure to PFAS and serious bodily harm.

134. Below are photos typical of warning labels for turnouts manufactured, marked, sold, and distributed by Defendants MSA/Globe and Lion. As depicted below, the labels do not disclose that the turnouts contain toxic PFAS or PFAS materials, and contain no warning that handling, wearing, or using the turnouts as they were intended to be handled, worn, or used can result in exposure to PFAS and serious bodily harm. Further, while the labels provide washing instructions, the instructions do not advise that turnouts should be washed in a commercial extractor to prevent cross-contamination and PFAS-exposure to family members who handle or wash the turnouts with other garments in home washing machines.

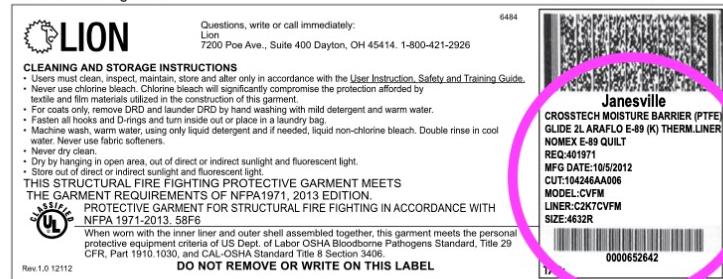




Garment Safety Label



Garment Cleaning Label



Garment Liner Attachment Safety Label



Drag Rescue Device (DRD) Label

Defendants' MSDS Sheets Do Not Warn About PFAS or PFAS Exposure

135. A Material Safety Data Sheet (or "MSDS") is a document that Occupational Safety and Health Administration (OSHA) requires companies to provide to end users for products that contain substances or chemicals that are classified as hazardous or dangerous. Access to such information is necessary for the Firefighter Plaintiff to provide a safe and effective response in emergency situations.

136. The MSDS provided with Defendants' Class B foams did not – and to this day do not – state that these foams contain PFAS or PFAS-containing materials; that PFAS is persistent, toxic and bio-accumulating; or that PFAS exposure causes serious bodily harm. To the contrary, the MSDS falsely stated that the Class B foams and/or their contents were not known carcinogens and did not cause birth defects.

137. Even now, the MSDS do not reflect the known serious health risks and hazards associated with exposure to PFAS in these Class B foams. For example, a MSDS updated on as recently as May 19, 2021 by Defendant National Foam for AFFF stated the product was not considered carcinogenic - contrary to decades of science.⁶⁶

Defendants' Misrepresentations About PFAS Continue to this Day

138. Despite their decades of knowledge about PFAS and its dangers, Defendants continue to make false claims, continue to misrepresent the safety of PFAS, and continue to minimize and fail to warn about the hazards of exposure to PFAS, or turnouts and Class B foams made with or containing PFAS.

⁶⁶National Foam Safety Data Sheet for Centurion (TMC6) 6% Aqueous Film Forming Foam Concentrate (AFFF) (May 19, 2021) https://nationalfoam.com/wp-content/uploads/sites/4/NMS340_Centurion-6-AFFF-Concentrate_052192021.pdf.

139. Defendants' misinformation campaign is long-standing and continues to this day.

Some pertinent examples include:

- a. 2017 – Defendant Lion's President, Stephen Schwartz, wrote a letter to the editor of the Columbus Dispatch, expressing outrage at the assertion in a government filing that firefighters may have been exposed to PFAS through turnout gear. Schwartz called this assertion false, stating that Lion's turn-out gear is not treated or made with PFOS or PFOA: "PFOAs and PFOSs have never been components of Lion's turn-out gear, either as a coating or as a textile." He acknowledged that turn-out gear is treated with PTFE to provide a durable water repellent, and that the textile industry in the past had used PFOA as a processing aid to manufacture PTFE moisture barrier films and repellents. "It is possible that trace amounts may have been present as a residue when the films and finishes were incorporated into Lion's turn-out gear. However, based on all available scientific data, such nominal trace amounts, if they existed at all, would not have posed any health risk to firefighters. There is absolutely no connection at all between PFOS and firefighter turnout gear."⁶⁷
- b. 2018 – The National Fire Protection Association (which maintains committees on foams and turnouts that are comprised, in part, of certain Defendants) issued a publication listing 11 ways to minimize risk of occupational cancer – the suggestions centered on wearing turnouts for protection resulting from combustion or spills, and cleaning turnouts after exposure to chemicals. There was not a single mention of avoiding contact with foam and/or the risks of wearing turnouts containing PFAS or PFAS-containing materials.⁶⁸
- c. 2019 – Defendant Lion issued a Customer Safety Alert for PFOA and Turnout Gear stating: "Your Lion turnout gear continues to be safe and ready for action especially when properly maintained. It is extremely important that firefighters continue to wear and properly care for their gear to stay safe on the job."
- d. 2019 – Defendant 3M Vice President, Denise Rutherford, testified before Congress that she absolutely agreed with the statement that "the weight of current scientific

⁶⁷ Letter from Lion president Stephen A. Schwartz to Ala D. Miller, Editor, The Columbus Dispatch (October 30, 2017), <http://files.constantcontact.com/bf8abd7a001/01f5d727-d72e-42dc-971b-caa9c2855800.pdf>.

⁶⁸ *11 Best Practices for Preventing Firefighter Cancer Outlined in New Report Put Out by VCOS and NVFC*, National Fire Protection Association Xchange (August 16, 2018), <https://community.nfpa.org/community/nfpa-today/blog/2018/08/16/11-best-practices-for-preventing-firefighter-cancer-outlined-in-new-report-put-out-by-vcos-and-nvfc>.

evidence does not show that PFOS or PFOA cause adverse health effects in humans at current rates of exposure.”⁶⁹

- e. 2019 - The Fire Fighting Foam Council (of which many Defendants have been members since its inception in 2001) wrote in their newsletter that: “Short-chain (C6) fluorosurfactants do not contain or breakdown in the environment to PFOS or PFOA and are currently considered lower in toxicity and have significantly reduced bio-accumulative potential than long-chain PFAS.”⁷⁰
- f. 2019 – Defendant Dynax founder Eduard Kleiner stated that C6-based surfactants [short-chain PFAS] do not bioaccumulate.⁷¹
- g. 2019 – Defendant Gore issued a public statement stating that “the potential exposures and associated risks of cancer effects from PFOA alternative and non-polymeric perfluoralkyl substances in Gore Components [turnout gear] are insignificant.”⁷²
- h. 2020 - FluoroCouncil – the lobbying arm of the PFAS industry – maintains that PFAS fluorotelomers that are in Class B foam and turnouts do not cause cancer, disrupt endocrine activity, negatively affect human development or reproductive systems, do not build up in the human body, and do not become concentrated in the bodies of living organisms.⁷³
- i. 2020 – The Fire Fighting Foam Council website states: “The short-chain (C6) fluorosurfactants that have been the predominant fluorochemicals used in fluorotelomer-based AFFF for the last 25 years are low in toxicity and not considered to be bio-accumulative based on current regulatory criteria.”⁷⁴

⁶⁹ Gabe Schneider, *3M Grilled over PFAS Chemicals at Congressional Hearing*, MinnPost (September 11, 2019), <https://www.minnpost.com/national/2019/09/3m-grilled-over-pfas-chemicals-at-congressional-hearing/>.

⁷⁰ *AFFF Update Newsletter*, Fire Fighting Foam Council (April 2019), <https://tinyurl.com/y57c5jwx>.

⁷¹ Marc S. Reisch, *What Is the Price of Fire Safety?*, Chemical & Engineering News (January 14, 2019), https://cen.acs.org/business/specialty-chemicals/price-fire-safety/97/i2?ref=search_results.

⁷² W.L. Gore and Associates, *Exposure Assessment and Cancer Risk Characterizations for Firefighters from Non-Polymeric PFAS Residuals in Gore Components Used in Firefighting Gear*, (August 20, 2019), <https://www.gortexprofessional.com/sites/tot/files/pdfs/Firefighter%20Exposure%20Assessment%20Short%20Chain%20Non%20Polymer%20Residual.pdf>

⁷³ *An Important Update About FluoroCouncil*, FluoroCouncil, Global Industry Council for Fluoro Technology (<https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/PFAS-Task-Force/Pollution-Prevention-Committee - see ‘Resources’ -- Fluorocouncil PFAS Information> (August 23, 2019).

⁷⁴ *Fact Sheet on AFFF Fire Fighting Agents*, Fire Fighting Foam Council (2017), <https://tinyurl.com/yyxscyas>.

- j. 2020 – The Fire Fighting Foam Council’s Best Practice Guidance for Use of Class B Foam - which was published in May 2016 and has not been updated to reflect the latest research - focuses entirely on eliminating and containing foam to minimize impact on the environment. It makes no mention of how to minimize the impact on firefighters who routinely handle, prepare, spray, or use Class B foam during training or in firefighting.⁷⁵
- k. 2020 – Defendant Lion-hired consultant Paul Chrostowski, PhD took out a full-page in Firefighter Nation to argue that turnout gear is completely safe and any evidence to the contrary, including the Notre Dame study, is unreliable and fear-mongering. “[E]ven if PFAS were found in their turnout gear, at this time there is no credible evidence that it ends up in firefighters bodies in amounts that would be higher than the general population.... the connection between PFAS and cancer is extremely weak. The few peer-reviewed epidemiological studies that have found an association were not statistically significant and inconsistent with other studies.... The materials used in turnout gear are the safest materials available, and without them, firefighters would be at extreme risk for burns and exposure to known cancer-causing toxic chemicals present on the fireground, as well as metabolic heat stress....Alternative materials tried by the U.S. fire service thus far have proven to be unsafe.”⁷⁶
- l. 2020 – Defendant Lion through its hired consultant Chrostowski also stated in Firefighter Nation that all turnouts are compliant with the standards set by the NFPA and Swiss organization OEKO-TEX’s Standard 100 for PPE and Materials for PPE. “The OEKO-TEX certification process tests for the presence of unsafe levels of trace materials, including PFOA.”⁷⁷
- m. 2021 - In a New York Times article, Defendant W.L. Gore maintained that its turnout products were safe.⁷⁸

⁷⁵ *Best Practice Guidance for Use of Class B Firefighting Foams*, Fire Fighting Foam Council (May 2016), <https://tinyurl.com/2kzd9d9>.

⁷⁶ Paul Chrostowski, *Research and Independent Testing Shows Firefighters’ Turnout Gear Remains Safe Despite Claims* (June 3, 2020), <https://www.firefighternation.com/health-safety/research-and-independent-testing-shows-firefighters-turnout-gear-remains-safe-despite-claims/#gref>.

⁷⁷ *Id.*

⁷⁸ Hiroko Tabuchi, *Firefighters Battle an Unseen Hazard: Their Gear Could Be Toxic*, New York Times, (January 26, 2021), <https://www.nytimes.com/2021/01/26/climate/pfas-firefighter-safety.html>.

- n. 2021 – In a Boston Globe article, spokeswoman for W.L. Gore would not comment on the Peaslee study by instead noted that turnout gear was “developed to protect firefighters working in harsh and often dangerous conditions.”⁷⁹
- o. 2021 – Defendant Lion stated that the representations articulated by its consultant Paul Chrostowski in 2020 (see above), reflect its position: “Dr. Chrostowski’s report says it all for Lion.”⁸⁰
- p. 2021 – Defendants MSA Globe and W. L. Gore have continued to state that their products have been tested and are safe.⁸¹
- q. 2022 – Defendant 3M stated that it was not "necessary or appropriate" to declare any PFAS hazardous.⁸² It also states on its website that: “The weight of scientific evidence from decades of research does not show that PFOS or PFOA causes harm in people at current or past levels....Decades of research into the health of these workers has not identified negative health outcomes caused by exposure to PFOA or PFOS....It is important to know that while some studies may find links or associations with possible health outcomes, this is not the same as causation. The weight of scientific evidence does not show that PFOS or PFOA causes harm to people at current or historical levels. Although PFAS have been detected in the environment at extremely low levels, their mere presence does not mean they are harmful.... Although it has been widely reported that no causal connection has been identified between exposure to PFOS or PFOA and harm to people’s health, there is a great deal of misinformation in the public domain.... The findings of the C-8 science panel are also frequently misunderstood.”⁸³
- r. 2022 - DuPont and Chemours also continue to assert that there is little scientific evidence to support that PFAS and/or certain PFAS, like fluoropolymers, are harmful

⁷⁹ David Abel, *Firefighters may be wearing gear that contains toxic chemicals, researchers find*, Feb. 5, 2021, <https://www.bostonglobe.com/2021/02/06/metro/firefighters-may-be-wearing-gear-that-contains-toxic-chemicals-researchers-find/?event=event12>

⁸⁰ David Ferry, *The Toxic Job of Being A Hero*, Men’s Health, (September 21, 2021), <https://www.menshealth.com/health/a37624731/cancer-firefighter-gear-pfas/>.

⁸¹ Andrew Wallender, *Firefighters Want Halt on Money From Makers of PFAS-Laden Gear*, Bloomberg Law, (January 19, 2021), <https://news.bloomberglaw.com/pfas-project/firefighters-want-halt-on-money-from-makers-of-pfas-laden-gear>.

⁸² Jim Spencer, *3M's Support for PFAS Could Cost Taxpayers Billions of Dollars*, Star Tribune (September 11, 2021), <https://www.startribune.com/3m-s-support-for-pfas-could-cost-taxpayers-billion-of-dollars/600096094/>.

⁸³ 3M website, PFAS Stewardship – Health Science (last visited January 12, 2022), https://www.3m.com/3M/en_US/pfas-stewardship-us/health-science/.

to human health.⁸⁴

- s. 2022 - DuPont maintains that turnouts keep firefighters safe and “protect against the intrusion of...chemicals.”⁸⁵

140. As frequent sponsors and advertisers in fire service publications, Defendants have been so influential in the industry that fire service leadership has echoed these narratives.

141. For example, in 2017, the International Association of Fire Fighters (“IAFF”), which represents more than 324,000 full-time professional firefighters, issued a statement that both mischaracterized and purported to state that the risks associated with exposure to PFAS and PFAS chemicals and materials in turnouts and Class B foams was minimal to non-existent.⁸⁶ The statement even encouraged firefighters to continue to wear turnouts and use legacy Class B foams, creating a false sense that these PFAS-containing turnouts and foams were safe. The statement reads, in relevant part:

Importantly, PFOA use has been almost completely phased out in the US....Fire fighters may have additional PFOA exposure sources such as older Class B firefighting foams. If PFOA is a combustion product of PFOA-containing consumer products made prior to phasing out use of this chemical, fire fighters will be exposed in fire suppression activities. However, the data are too limited at present to determine this. PFOA is unlikely to be a component in recently US manufactured turnout gear. However, if PFOA is a combustion product, it may be present as a contaminant on turnout gear. PFOA may also be present as a

⁸⁴ DuPont website, Information on PFAS (last visited January 12, 2022), <https://www.pp.dupont.com/pfas/what-governmental-agencies-say.html>; Chemours website, Our Commitment to PFAS Stewardship (last visited January 12, 2022), <https://www.chemours.com/en/corporate-responsibility/sustainability-safety/our-commitment-to-pfas-stewardship>.

⁸⁵ *Id.* at DuPont website (last visited January 12, 2022), <https://www.pp.dupont.com/knowledge/dupont-technology-in-your-turnout-gear.html>.

⁸⁶ The IAFF maintained this position until January 2021 when IAFF members demanded that the IAFF leadership hold turnout and Class B foam manufacturers accountable.⁸⁶ In July 2021, new IAFF President Edward Kelley made clear that the cancer rates of firefighters is unacceptable and that IAFF is actively working to rid the fire service of the toxic PFAS found in firefighting foams and turnout gear. “The data is becoming clearer. The gear that’s supposed to be protecting us is poisoning us. It defies logic. IAFF, Address by IAFF General President Edward Kelly, Facebook (July 16, 2021), <https://www.facebook.com/IAFFonline/videos/180233720677454>.

manufactured component of legacy turnout gear....The exposure contribution from any such PFOA content is likely to be minimal since volatilization from the manufactured product would be required....At this time, IAFF does not recommend that legacy turnout gear be replaced outside of its lifecycle. Fire fighters wishing to minimize PFOA exposure should continue to wear their PPE...and regularly decontaminate their turnout gear. IAFF will continue to monitor developments and update this fact sheet should new information become available.⁸⁷

142. The IAFF maintained the Defendants' position that the turnout gear and Class B foam was safe until new leadership took over in 2021. Because of these and other false claims and misrepresentations on the part of Defendants, the Firefighter Plaintiff did not know and, in the exercise of reasonable diligence, could not have known that the turnouts and Class B foams he used contained PFAS or PFAS-containing materials, and caused the Firefighter Plaintiff to be exposed to PFAS and/or PFAS-containing materials, causing him to suffer cancers and other serious illnesses as a result of such exposure.

143. Also, in January 2021, Defendants DuPont and Chemours along with Corteva (the agricultural unit of DuPont that it spun off in 2019) announced a cost-sharing agreement worth \$4 billion to settle lawsuits involving the historic use of PFAS – thereby acknowledging, at long last, the significant harm their PFAS chemicals have caused to human health and the environment.

New Research Indicates That Firefighters are at Significant Risk of Harm From Exposure to PFAS in Turnouts and Class B Foams — But Defendants Continue to Discount or Deny These Risks

144. While historical research has centered on environmental impacts and environmental exposures associated with PFAS and PFAS-containing products, recent studies have focused specifically on the serious health impacts to firefighters stemming from their occupational exposure to turnouts and Class B foams containing PFAS.

⁸⁷ Statement on PFOA and Turnout Gear, International Association of Firefighters, (May 2017), <https://tinyurl.com/y29mfh69>.

145. In October 2019, for example, an expert panel of the International Pollutants Elimination Network (IPEN), an international non-profit organization comprised of over 600 public interest non-governmental organizations dedicated to improving global chemical waste policies, published a scientific paper that, in the words of its authors, “presents unequivocal evidence from recent studies that firefighters” using Class B foams (primarily AFFF) “have unexpectedly elevated blood levels” of PFAS, including, specifically, PFHxS and PFOS, with PFHxS (a short-chain, C6 PFAS) being “potentially of greater concern than PFOS given its much longer elimination half-life in humans.”⁸⁸

146. The paper explains that “[f]irefighters can be significantly exposed to PFHxS and other PFAS from firefighting foam via various occupational mechanisms including direct exposure during use as well as exposure from contaminated personal protective equipment (PPE), handling of contaminated equipment, managing PFAS foam wastes, occupation of contaminated fire stations and consumption of contaminated local water and produce. Cross-contamination and legacy PFAS residues from inadequately decontaminated appliances after transitioning to fluorine-free foam can remain a long-term problem.”⁸⁹ The panel concluded that “[o]ngoing exposure to PFHxS, PFOS and other PFAS amongst firefighters remains a major occupational health issue,” noting that “[b]io-accumulation and very slow bio-elimination may be very significant influencing factors in PFHxS exposure” in firefighters.⁹⁰ “Of greater concern,” the panel observed, “is that firefighter blood levels for PFOS and PFHxS are many times higher than the median values for

⁸⁸ Perfluorohexane Sulfonate (PFHxS) – *Socio-Economic Impact, Exposure and the Precautionary Principle Report*, IPEN Expert Panel (October 2019), https://ipen.org/sites/default/files/documents/pfhxs_socio-economic_impact_final_oct.2019.pdf.

⁸⁹ *Id.* at p. 25.

⁹⁰ *Id.*

the general...population.”⁹¹

147. In June 2020, scientists at the University of Notre Dame published a groundbreaking study on PFAS in turnout gear, and the exposure risks posed to firefighters that wear, wore, or handle such gear (“Notre Dame Turnout Study”). The Notre Dame Turnout Study analyzed over 30 sets of used and unused (still in their original packaging) turnout gear made by six U.S. manufacturers, including Defendants MSA/Globe, Lion and Honeywell, over several production years, as listed below:⁹²

PPE gear manufacturers sampled:	# samples
Globe Manufacturing (Pittsfield MA),	11
Lion Group (Dayton OH),	12
Honeywell First Responder (Dayton, OH),	2
Lakeland Fire (Decatur, AL)	2
Quest Fire Apparel (Saratoga Springs, NY)	1
Quaker Safety (Quakertown, PA)	2

The type and number of turnout gear samples used in this study.

148. The Notre Dame Turnout Study noted that these manufacturers’ turnout gear (or personal protective equipment-PPE, as it is described in the study) are manufactured “from textiles that are made from fluoropolymers (one form of PFAS) or extensively treated by PFAS in the form of side-chain fluoropolymers.”⁹³ According to the researchers, “[t]hese PFAS include fluoropolymer materials such as PTFE used as a moisture barrier in the inner layers of turnout gear.”⁹⁴ The study found significant levels of PFAS chemicals – including PFOA, PFOS, PFBA,

⁹¹ *Id.*

⁹² *Id.*, at fn. 8.

⁹³ *Id.*, at p. A.

⁹⁴ *Id.*

PFPeA, PFHxA, PFHpA, PFNA, PFDA, PFUnA, PFDa, PFTrDA, PFToDA, PFBS, PFOSA, N-EtFOSA, MeFOSAA, N-MeFOSE, N-EtFOSE and 6:20FTS – in both new and used turnout gear, and across layers, portions, and materials in the turnout gear, including in material layers that are not intentionally treated with PFAS by the manufacturer, thereby providing “the first evidence that suggests PFAS appear to migrate from the highly fluorinated layers and collect in the untreated layer of clothing worn against the skin.”⁹⁵

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Letter

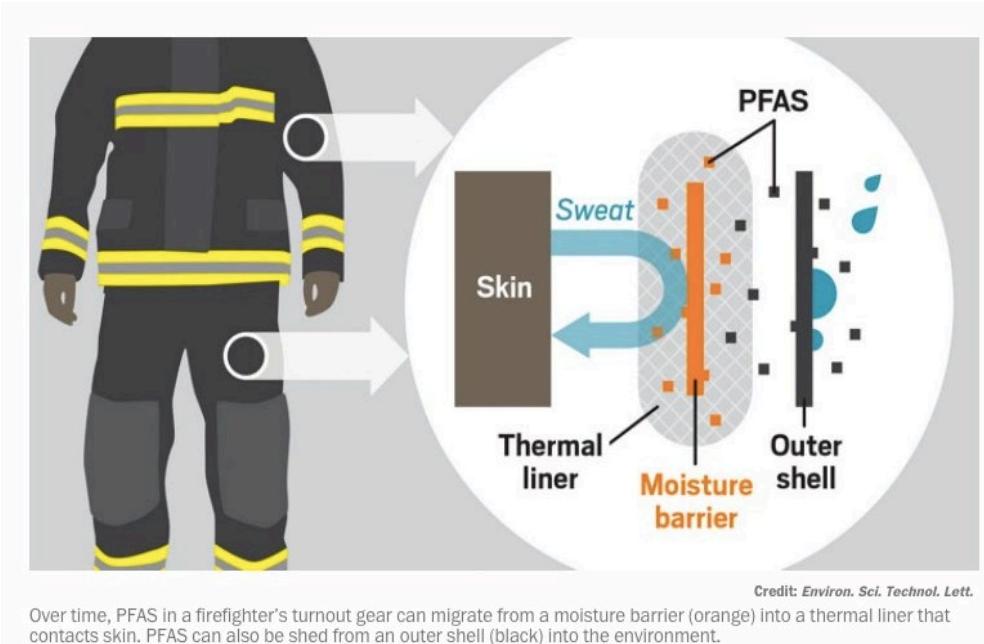
Table 2. Quantities of Target PFAS (in ppb) Found in US Turnout Gear by LC–MS/MS Analysis

values in ppb	jacket 2008 unused			pants 2014 used			jacket 2008 used	jacket 2017 unused
	thermal liner	moisture barrier	outer shell	thermal liner	moisture barrier	outer shell	moisture barrier	moisture barrier
PFBA	<MDL	12.8	10.6	139	615	21.5	20.5	991
PFPeA	<MDL	12.6	17.8	228	104	164	18.1	249
PFHxA	<MDL	30.5	36.9	199	28.6	10.9	35.8	36.9
PFHpA	<MDL	12.4	25.4	105	5.82	2.23	14.3	25.4
PFOA	78	46	182	850	71	97	37	<MDL
PFNA	2.63	<MDL	8.2	25.3	1.95	<MDL	2.76	<MDL
PFDA	2.98	6.51	5.51	133	<MDL	<MDL	23.7	<MDL
PFUnA	<MDL	<MDL	<MDL	7.96	<MDL	<MDL	2.51	<MDL
PFDa	<MDL	5.01	<MDL	68.6	<MDL	<MDL	25.9	<MDL
PFBS	283	140	142	53 400	47 900	1050	230	90 400
PFOS	<MDL	<MDL	<MDL	7	<MDL	<MDL	2	<MDL
6:2 FTS	<MDL	<MDL	<MDL	25.9	12.9	<MDL	<MDL	<MDL
8:2 FTS	<MDL	<MDL	<MDL	11.1	<MDL	<MDL	<MDL	<MDL

149. These findings suggest that, as the garments are worn, PFAS from the outer shell and the moisture barrier can migrate from the turnouts and contaminate both the firefighter, their apparatus and workplace with PFAS. The analysis also indicated that fluoropolymers from the outer layer decompose into other PFAS, including PFOA.

150. “Startlingly,” researchers reported, “garment to hand transfer of total fluorine in the ppm range was also observed when researchers simply manipulated the textiles in [the]

⁹⁵ *Id.*, at p. C.



laboratory.”⁹⁶ The accumulation of PFAS on researchers’ hands strongly suggests that transference of ppm levels of PFAS can occur merely by handling the turnouts and that PFAS exposure pathways include inhalation, ingestion and/or absorption (through dermal contact) – all of which DuPont internally acknowledged as being toxic in 1980. Such exposure pathways are a concern not only for firefighters that rely on turnouts to protect them from heat, fire, water, and chemical hazards in the field, but to family members who may be exposed to the PFAS in turnouts as the result of home washing or storage. Lead researcher Graham Peaslee commented that turnouts are “the most highly fluorinated textiles I’ve ever seen”⁹⁷ and that the level of PFAS in the turnout gear means that firefighters are “swimming in a sea of [PFAS]. Those numbers for scientists are scarily high...”⁹⁸ Despite these findings, Defendants have been quick to

⁹⁶ *Id.*

⁹⁷ Raleigh McElvery, *Protective Gear Could Expose Firefighters to PFAS*, Chemical and Engineering News (July 1, 2020), <https://cen.acs.org/environment/persistent-pollutants/Protective-gear-expose-firefighters-PFAS/98/i26?fbclid=IwAR3ktyIcasjnxHiv3RNDRJldZmunQleAEoS3Av225uOscj2hFbffVcO3-Go>.

⁹⁸ Andrew Wallender, *Firefighters Face New Possible Risk From Toxic PFAS: Their Gear*, Bloomberg Law (June 23, 2020), <https://news.bloomberglaw.com/pfas-project/firefighters-face-new-possible-risk-from-toxic-pfas-their-gear>.

mischaracterize, dismiss or downplay the significance of the Notre Dame Turnout Study. Defendant MSA/Globe, when contacted about the study and asked whether Globe planned to study this issue and find an alternative to PFAS for turnouts, merely responded thusly: “[P]rotecting (firefighters) is Globe’s business; every piece of our turnout gear meets or exceeds applicable industry standards.”⁹⁹

151. Defendant Lion’s responses have been similar and have also dismissed or minimized the significance of the Notre Dame Turnout Study’s findings. Lion issued a Customer Safety Alert for PFOA and Turnout Gear stating: “Your Lion turnout gear continues to be safe and ready for action especially when properly maintained. It is extremely important that firefighters continue to wear and properly care for their gear to stay safe on the job.”¹⁰⁰

152. The Customer Safety Alert goes on to stress that Lion does not use PFOA or PFOS (two long-chain PFAS chemicals) in its turnouts.¹⁰¹ It does not, however, address that Lion’s turnouts in fact contain other PFAS chemicals, nor warn firefighters or the public about health harms associated with exposure to these toxic, bio-accumulating chemicals.

⁹⁹ Blair Miller, *Local Firefighters Concerned About Potentially Dangerous Chemicals on Gear*, Boston 25 News (February 26, 2019), <https://www.boston25news.com/news/local-firefighters-facing-concerns-over-potentially-dangerous-chemicals-on-gear/925236612/>.

¹⁰⁰ Lion Customer Safety Alert – PFOA and Turnout Gear (April 24, 2019), https://cdn2.hubspot.net/hubfs/3475623/LION_PFOA_factsheet_042419.pdf.

¹⁰¹ *Id.*

**HERE'S ALL YOU NEED TO KNOW
ABOUT PFOA AND YOUR TURNOUT GEAR.**

What is PFOA and why are we talking about it?

Perfluorooctanic Acid (PFOA) is a chemical that until recently was used in the process to make many different industrial chemicals and products. The manufacture and use of PFOA was mostly phased out by major chemical companies by 2010. By 2015, its manufacture was eliminated in the United States.

In the firefighting protective clothing industry, PFOA was used as a processing agent in the manufacture of resins used to make PTFE films – the primary component of the moisture barrier used in turnout gear. While most residual PFOA was eliminated from the manufacturing process of PTFE, some tiny trace amounts remained.

LION does not use PFOA or PFOS in our turnout gear or any of our protective products.

PFOS has never been a component of turnout gear. PFOS health and environmental concerns are largely related to AFFF foams and are not connected to turnout gear.

153. As noted above, Defendant Lion's paid consultant, Dr. Paul Chrostowski, also has taken aim at the Notre Dame Turnout Study and its findings. Refuting a Fire Rescue magazine article about the study,¹⁰² Chrostowski repeated Lion's website statement that "PFOA was never part of the gear itself and frequent independent testing has found only trace amounts of it in any of the gear – not nearly enough to cause concern, and in amounts similar to consumer products."¹⁰³ Chrostowski went on to say "[t]he fact is that one may find trace amounts of 'short-chain' PFAS such as PFBS and PFHxA in firefighting textiles, but the scientific research shows that these materials are far less toxic than even PFOA and at the tiny trace levels the risk are extremely low

¹⁰² Larissa Conroy, *What If I Told You That Your Bunker Gear Was Causing Cancer?*, Fire Rescue (May 28, 2020), <https://www.firefighternation.com/firerescue/what-if-i-told-you-that-your-bunker-gear-was-causing-cancer/#gref>.

¹⁰³ Paul Chrostowski, Ph.D., QEP, *Research and Independent Testing Shows Firefighters' Turnout Gear Remains Safe Despite Claims*, Fire Rescue (June 3, 2020). <https://firerescuemagazine.firefighternation.com/2020/06/03/research-and-independent-testing-shows-firefighters-turnout-gear-remains-safe-despite-claims/-gref>.

based on numerous credible published scientific research papers.”¹⁰⁴ Finally, Chrostowski falsely stated that the link between PFAS exposure and cancer is “extremely weak.”¹⁰⁵

154. And yet, Lion has admitted publicly that dermal absorption is a pathway of exposure to cancer-causing chemicals for firefighters. In Lion’s Not in Our House cancer awareness fact sheet that currently appears on the company’s website, Lion warns firefighters: “For every 5 degree increase in temperature, skin becomes 400% more absorbent. The hotter you are, the more carcinogens your skin absorbs.¹⁰⁶ This statistic is alarming given that the core body



¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Lion website, [https://cdn2.hubspot.net/hubfs/3475623/NOT%20IN%20OUR%20HOUSE%20Tip%20Sheet_Infographic%20\(02-02-19\).pdf](https://cdn2.hubspot.net/hubfs/3475623/NOT%20IN%20OUR%20HOUSE%20Tip%20Sheet_Infographic%20(02-02-19).pdf) (last visited November 1, 2021).

temperature of firefighters routinely increases during firefighting activities while wearing turnouts which contain known carcinogens.¹⁰⁷

155. Likewise, Defendant Honeywell has stated: “The skin on the neck is very thin and prone to absorbing carcinogenic particulates.”¹⁰⁸

156. Another recent Harvard study examining PFAS levels in fire stations dust found that “dust in turnout gear locker areas and adjoining apparatus bays had significantly higher fluorine concentrations compared to living rooms in fire stations,” as well as fluorine concentrations typically found in Class B foam and/or textiles as opposed to consumer products.¹⁰⁹



¹⁰⁷ Nancy Espinoza, *Can We Stand the Heat?*, Journal of Emergency Medical Services, (April 30, 2008), <https://www.jems.com/operations/can-we-stand-heat-study-reveal/>; Gavin P. Horn, et al., *Thermal Response to Firefighting Activities in Residential Structure Fires: Impact of Job Assignment and Suppression Tactic*, Ergonomics (July 31, 2017), <https://tinyurl.com/4j2mz7f7>.

¹⁰⁸ Ronnie Wendt, *Innovations in Turnout Gear*, Industrial Fire World (March 17, 2021), <https://www.industrialfireworld.com/598931/innovations-in-turnout-gear>.

¹⁰⁹ A.S. Young et al., Per- and Polyfluoroalkyl Substances (PFAS) and Total Fluorine in Fire Station Dust, J. Expo. Sci. Environ. Epidemiology (2021), <https://doi.org/10.1038/s41370-021-00288-7>.

157. For years, the IAFF has held a yearly cancer summit and until 2021, had done little to address the PFAS in turnouts.¹¹⁰ Defendants, including at least DuPont, Gore, Lion and MSA/Globe, have been regular sponsors of the IAFF Cancer Summit.

158. At this event, as well as in firefighter cancer-related publications, programs and events, Defendants repeatedly used the summit as an opportunity to push the narrative that incidence of cancer among firefighters is attributable either to other chemicals encountered in the line of duty, or firefighters' failure to wash their turnouts after every call. Not once have the turnout Defendants admitted that the PFAS materials in their products have been found to be carcinogenic, and that the very equipment that should be protecting firefighters is causing the most harm.

159. Further, Lion's recently launched "Not in Our House" cancer awareness program is sadly ironic in that it encourages firefighters themselves to make a pledge to protect themselves from carcinogens linked to cancer ("I will make every effort to protect myself and my team by doing my part to take precautions that will minimize the risk of exposure to carcinogens that may

¹¹⁰ As alleged above, fn. 78, IAFF has only recently begun to take action related to PFAS exposure due to pressure from its firefighter members. At the IAFF Annual Meeting in January 2021, two groundbreaking PFAS-related firefighter safety resolutions passed with the support of 99% of the membership. The resolutions require IAFF to: (1) sponsor independent testing of turnouts for PFAS and PFAS-related hazards, (2) oppose the use of PFAS and PFAS-containing materials in turnouts, (3) require manufacturers to cease using PFAS in their firefighting products (4) identify which manufacturers will not cease using PFAS, (5) issue an advisory to fire departments to stop sending used or old turnouts to communities that are not able to buy new gear and instead provide grants to purchase new gear, and (6) cease accepting financial sponsorships from any PFAS/chemical-related companies unless it is to purchase PFAS-free turnout gear. Andrew Wallender, *PFAS Resolutions Overwhelmingly Approved by Firefighters' Union*, Bloomberg Law (February 1, 2021), <https://news.bloomberglaw.com/daily-labor-report/pfas-resolutions-overwhelmingly-approved-by-firefighters-union>; San Francisco Firefighters Cancer Prevention Foundation, (last visited September 30, 2021), <https://www.sffcpf.org/resolutions-to-protect-members-from-toxic-substances-in-ppe/>.

lead to cancer...") while all the while refusing to take any corporate responsibility for continually exposing firefighters to carcinogens in their protective gear.¹¹¹

It Was Technologically and Economically Feasible for Defendants to Design Safer Firefighting Foams and Turnouts

160. Defendants have long known that safer, reasonable, alternative designs existed and could be utilized. These designs are and were not only technologically feasible, but also economically. Indeed, given the enormous cost of remediation of the environment and litigation, not to mention the cost of human lives, the safe, feasible alternatives would have cost significantly less.

161. In the early 2000s, 3M, in conjunction with Solberg Scandinavian AS developed Re-Healing Foam ("RF"), a high-performance, AFFF-comparable product that contained no fluoroochemicals, and resulted in two patents and three commercial products of PFAS-free firefighting foam. RF met the standard of "ICAO [International Civil Aviation Organization] Level B and matched AFFF in performance including a US MIL-Spec product."¹¹²

162. In 2007, Solberg bought 3M's patent rights to RF and continued to market and sell RF.

163. In 2011, Defendant Amerex acquired Solberg and continued to manufacture, market, and sell RF.

¹¹¹ Rachel Zoch, *Take A Pledge To Stop Cancer At the Door*, Fire Rescue 1 (January 28, 2019), <https://www.firerescue1.com/fire-products/personal-protective-equipment-ppe/articles/take-a-pledge-to-stop-cancer-at-the-door-e8bn7uAbtIXWdQau/>.

¹¹² *Fluorine Free Firefighting Foams (3F) – Viable Alternatives to Fluorinated Aqueous Film-Forming Foams (AFFF)*, IPEN Expert Panel (September 2018), https://ipen.org/sites/default/files/documents/IPEN_F3_Position_Paper_POPRC-14_12September2018d.pdf; Schaefer, Ted. H. et al., New Foam Technology, New Found Benefits, Solberg, IAFPA Sydney 2005 Conference Proceedings (Oct. 5-7, 2005), [https://www.solbergfoam.com/getattachment/c5bef149-b850-48df-81a8-19b977c6daed/New-Foam-Technology,-New-Found-Results.aspx](https://www.solbergfoam.com/getattachment/c5bef149-b850-48df-81a8-19b977c6daed/New-Foam-Technology,-New-Found-Results.aspx;);

164. In 2014, the EPA presented Solberg with the Presidential Green Chemistry Challenge Award for its fluorine-free foams; the award recognizes technologies that prevent pollution and match or improve the performance of existing products.¹¹³

165. In 2018, Defendant Perimeter Solutions acquired Solberg and continued to manufacture, market and sell RF.

166. Also, beginning in the early 2000s, BIOEX launched a highly effective, fluorine-free Class B F3 foam which has been approved and used by international airports, fire departments, oil and gas companies, the marine industry, and pharmaceutical and chemical companies around the world.¹¹⁴

167. However, lobbyists and companies invested in maintaining profits on fluorinated Class B foam not only continued to represent that PFAS-containing foam was safe, but also intentionally maligned the fluorine free foams, falsely asserting that these foams were less effective and more expensive.¹¹⁵ As noted by IPEN:

Over the years since the serious introduction on the market of Class B fluorine-free

¹¹³ Marc S. Reisch, *What Is the Price of Fire Safety?* As Lawsuits Pile Up and Government Pressure Rises, Firefighting-Foam Makers Reconsider the Environmental Cost of Fluorosurfactants, Chemical & Engineering News (January 14, 2019), <https://cen.acs.org/business/specialty-chemicals/price-fire-safety/97/i2>.

¹¹⁴ *Fluorine Free Firefighting Foam (FFF) – Firefighting Foam Concentrates*, BIOEX website (last visited December 13, 2021), <https://www.bio-ex.com/en/our-products/compositions/fluorine-free-foam/>; “Major international hubs such as Dubai, Dortmund, Stuttgart, London Heathrow, Manchester, Copenhagen, and Auckland. All of the 27 major airports in Australia have transitioned to F3 foams, with airports in Europe such as Billund, Guernsey, Bristol, Blackpool, Koln Bonn also using F3 [fluorine-free] foams. Private sector companies using F3 foams include: BP, ExxonMobil, Total, Gazprom, Statoil, BHP Billiton, Bayern Oil, 3M, BASF, Chemours, AkzoNobel, Stena Line, Pfizer, Lilly, Weifa, JO Tankers, and ODFJEL. In the oil and gas sector F3 foams are being extensively, with Statoil in Norway having transitioned to F3 foams throughout all of it operations. Some military users including the Danish and Norwegian Armed forces have moved to F3 foams, with the Royal Danish Airforce transitioning to F3 foams several year ago.” Fluorine Free Firefighting Foams (3F) – Viable Alternatives to Fluorinated Aqueous Film-Forming Foams (AFFF), IPEN Expert Panel, pg. 48 (September 2018), https://ipen.org/sites/default/files/documents/IPEN_F3_Position_Paper_POPRC-14_12September2018d.pdf

¹¹⁵ *Id.*, at 20.

F3 foams suitable for hydrocarbon and polar solvent fires: there have been many attempts by the fluorochemical side of the industry and their lobbyist trade associations to undermine and downplay the operational performance of Class B fluorine-free foams whilst minimizing the environmental issues associated with fluorinated products. This has included publishing in the technical trade literature spurious performance tests carried out by non-independent or certified bodies funded by competitors to F3 producing companies, as well as continually perpetrating unsupported myths. It is these myths in particular that must be controverted for what they are: marketing hype, misrepresentation of test conditions, frank untruths or only partial truths, criticism of a competitor's product, and an exhibition of vested interests.¹¹⁶

168. In 2011, the Fire Fighting Foam Coalition, which includes Defendants Tyco, DuPont, Dynax, Kidde, and Buckeye, misrepresented a U.S. Navy report comparing Solberg's fluorine-free RF with Defendant National Foam's 6-Em AFFF and Defendant Buckeye's FC-3MS AFFF, asserting Solberg's RF was less effective. In fact, though Solberg's RF was not made per military specifications as it did not include fluorine, the U.S. Navy Report found:

For iso-octane, the non-fluorinated foam had shorter extinguishment times than the two AFFFs and was the only foam to achieve an extinguishment time under 30 seconds....The non-fluorinated foam had substantially better performance on iso-octane than on any of the other fuels.

Conclusions: For the AFFF foams which were intended to work via formation of an aqueous film, fire extinction times were lengthened considerably in cases where film formation was made difficult by the low surface tension of the fuel. For the non-filming fluorine-free foam, however, no such performance decrement was observed, and the fire extinction times on the lowest surface tension fuel were lower than for fuels with higher surface tensions, and within the 30 second time limit specified (on gasoline) by MIL-F-24385F.¹¹⁷

169. Further, the study found that AFFF foams had 25% drain times (between 4-6 minutes) whereas the fluorine-free RF's drain time was 12 minutes. This slower drain time leads

¹¹⁶ *Id.*, at 22.

¹¹⁷ *Re-Healing Foam Fire Performance*, Technical Bulletin, #1009, Solberg Foam, (last visited December 13, 2021), <https://www.solbergfoam.com/getattachment/f8574423-9518-4888-a054-c170c0d9a234/RE-HEALING-Foam-Fire-Performance.aspx>.

to greater burn back resistance and greater safety for firefighters. The technology to develop safer, effective and economical fluorine-free Class B foam is and has been available for, at least, over 20 years. In fact, many firefighting foam manufacturers and distributors companies manufacture, market and/or sell fluorine-free firefighting foams, including Defendants Tyco, Perimeter Solutions, Chemguard, Johnson Controls, and National Foam.

170. EUROFEU, an umbrella organization representing fire protection trade associations and companies including Defendant Tyco, even stated in 2019: “We believe that F3s [fluorine-free foams] are very suitable for a growing number of applications such as municipal firefighting, training, some testing and as foam agents in first responding fire trucks.”¹¹⁸

171. LAST FIRE, a consortium of international oil companies developing best industry practice in storage tank Fire Hazard Management including Shell Oil, Chevron, BP, Exxon and Defendant Perimeter Solutions, concluded after conducting 200 tests that: “Fluorine free foams can provide equivalent performance to C6 foams [AFFF] and provide appropriate performance for hydrocarbon [fires].”¹¹⁹

172. Safe fluorine-free turnout gear was and is also technologically and economically feasible.

173. Defendant Fire-Dex manufactures, markets and sells an entire line of PFAS-free turnouts, as well non-fluorinated fabrics from Safety Components with a PFAS-free water-

¹¹⁸ *The Use of PFAS and Fluorine-Free Alternatives in Fire-Fighting Foams*, European Commission DG Environment and European Chemicals Agency (ECHA), Final Report, June 2020, p. 273, https://echa.europa.eu/documents/10162/28801697/pfas_flourine-free_alternatives_fire_fighting_en.pdf/d5b24e2a-d027-0168-cdd8-f723c675fa98

¹¹⁹ *Id.*, at pp. 314-315. Hydrocarbon fires are flammable gas or liquid fires that may involve gas, oil, kerosene, ethanol, propane, acetylene, hydrogen, and methane, to name a few.

repellent.¹²⁰ “Made with the same fabric as our traditional TECGEN71 outer shell, this material is designed to reduce heat stress while offering the same performance levels in TPP, breathability, and overall reduction of composite weight.”¹²¹ Further, because of the increased breathability and thermal protection, the PFAS-free gear is the only outer shell that can currently be paired with the lightest and thinnest thermal liners and moisture barriers.¹²² This, according to Fire-Dex, significantly reduces heat stress and cardiac failure for firefighters while also reducing the risk of cancer and other diseases by eliminating PFAS exposure through turnout gear.

174. Defendants MSA/Globe, Honeywell, Tencate, and Gore have developed, manufactured, marketed and/or sold PFAS-free waterproofing technology, PFAS-free outer shells in turnout gear and/or durable PFAS-free fabrics.¹²³

175. Defendant Honeywell even admitted that these PFAS-free alternatives are safe, feasible and economical: “Any minor tradeoffs with PFAS-free fabrics are outweighed by worker safety. And the protection level is unchanged. PFAS-free gear offers the same thermal protection and moves the same way. The color fastness and wear remain the same.”¹²⁴

¹²⁰ Fire-Dex Launches Non-Fluorinated PPE Fabrics, Firehouse.com (February 17, 2021), <https://www.firehouse.com/safety-health/ppe/turnout-gear/press-release/21210722/firedex-firedex-launches-nonfluorinated-ppe-fabrics>.

¹²¹ Alternative PPE, Fire-Dex website, (last visited December 14, 2021), <https://www.firedex.com/catalog/tecgen51-fatigues/#materials>.

¹²² TecGen71 Outer Shell, Fire-Dex website, (last visited December 14, 2021), <https://www.firedex.com/tecgen71/>.

¹²³ FreeFAS Durable Water Repellent (DWR) Coating, MSA/Globe website (last visited December 14, 2021), <https://globe.msasafety.com/newoutershells>; Id. at fn. 106, Wendt, Innovations in Turnout Gear, Industrial Fire World (March 17, 2021), <https://www.industrialfireworld.com/598931/innovations-in-turnout-gear>; WL Gore to Release PFAS-free Waterproof Material for Apparel, Chemical Watch (October 4, 2021), <https://chemicalwatch.com/346695/wl-gore-to-release-pfas-free-waterproof-material-for-apparel>.

¹²⁴ *Id.*, at fn. 107.

176. While the technology to develop fluorine-free turnout gear has been available for years, the NFPA 1971/1851 standards-setting technical committee continues to adhere to certain guidelines for turnout gear which require PFAS – knowingly putting firefighters at risk for exposure to PFAS. This committee is comprised of industry consultants, textile, and gear manufacturers, including Defendants MSA/Globe, Lion, Tyco, and Honeywell.¹²⁵

177. The economic and technological feasibility of fluorine-free foams and turnout gear is well-established and based on technology that has been available for years. The alternative designs detailed above are far safer for firefighters and eliminate the serious health risks that result from PFAS exposure.

178. The only barrier to producing safer alternatives to PFAS-containing foams and turnout gear has been Defendants' opposition. Their continued manufacturing, marketing, selling and/or distributing PFAS-containing foams and turnout gear has exposed firefighters to toxic PFAS chemicals. These defective designs are and/or have been a substantial factor in causing Firefighter Plaintiff's injuries.

179. Based on all the foregoing, Plaintiff brings this action for damages and for other appropriate relief sufficient to compensate them for the significant harm Defendants' PFAS chemicals and PFAS-containing products have caused.

COUNT I – NEGLIGENCE

180. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

¹²⁵ NFPA 1971/1851 Technical Committee Meeting Minutes (March 31, 2020), https://www.nfpa.org/assets/files/AboutTheCodes/1971/1971_F2022_FAE_SPF_Pre-FD_MeetingMinutes_3_20.pdf; NFPA 1971/1851 Technical Committee Meeting Minutes (January 11-12, 2012), [https://www.nfpa.org/assets/files/aboutthecodes/1851/fae-spf_pre-rocmeetingminutes_01-12%20\(2\).pdf](https://www.nfpa.org/assets/files/aboutthecodes/1851/fae-spf_pre-rocmeetingminutes_01-12%20(2).pdf)

181. Defendants had a duty to individuals, including the Plaintiff, to exercise reasonable, ordinary, and appropriate care in the manufacturing, design, labeling, packaging, testing, instruction, warning, selling, marketing, distribution, and training related to the AFFF and turnout gear product.

182. Defendants breached their duty of care and were negligent, grossly negligent, reckless, and willful as described herein in the design, manufacture, labeling, warning, instruction, training, selling, marketing, and distribution of the AFFF products in one or more of the following respects:

- a. Failing to design the products so as to avoid an unreasonable risk of harm to individuals, including the Plaintiff;
- b. Failing to use reasonable care in the testing of the products so as to avoid an unreasonable risk of harm to individuals, including the Plaintiff;
- c. Failing to use appropriate care in inspecting the products so as to avoid an unreasonable risk of harm to individuals, including the Plaintiff;
- d. Failing to use appropriate care in instructing and/or warning the public as set forth herein of risks associated with the products, so as to avoid unreasonable risk of harm to individuals, including the Plaintiff;
- e. Failing to use reasonable care in marketing, promoting, and advertising the products so as to avoid unreasonable risk of harm to individuals, including the Plaintiff;
- f. Otherwise negligently or carelessly designing, manufacturing, marketing, distributing, warning; and
- g. In selling and or distributing a product which was inherently dangerous to the public.

183. As a direct and proximate result of Defendants' negligence, the Plaintiff has been injured, sustained severe and permanent pain, suffering, disability, impairment, loss of enjoyment of life, loss of care, comfort, economic loss, and damages including, but not limited to medical expenses, lost income, and/or other damages.

WHEREFORE, the Plaintiff prays judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

COUNT II-INADEQUATE WARNING

184. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

185. Defendants knew or should have known:

- a) exposure to AFFF and turnout gear containing PFAS was hazardous to human health;
- b) the manner in which they were designing, marketing, developing, manufacturing, distributing, releasing, training, instructing, promoting, and selling AFFF and turnout gear containing PF AS was hazardous to human health; and
- c) the manner in which they were designing, marketing, developing, manufacturing, marketing, distributing, releasing, training, instructing, promotion and selling AFFF and turnout gear containing PFAS would result in the contamination of Plaintiff's blood and/or body as a result of exposure.

186. Defendants had a duty to warn of the hazards associated with AFFF and turnout gear containing PFAS entering the blood and/or body of Plaintiff because they knew of the dangerous, hazardous, and toxic properties of AFFF and turnout gear containing PFAS. Defendants failed to provide sufficient warning to purchasers that the use of their products would cause PFAS to be released and cause the exposure and bioaccumulation of these toxic chemicals in the blood and/or body of Plaintiff.

187. Adequate instructions and warnings on the AFFF and turnout gear containing PFAS could have reduced or avoided these foreseeable risks of harm and injury to Plaintiff. If Defendants provided adequate warnings:

- a) Plaintiff could have and would have taken measures to avoid or lessen exposure;
- b) end users and governments could have taken steps to reduce or prevent the release of PFASs into the blood and/or body of Plaintiff. Defendants' failure to warn was a direct and proximate cause of Plaintiff's injuries from PFAS that came from the use, storage, and disposal of AFFF containing PFAS. Crucially, Defendants' failure to provide adequate and sufficient warnings for the AFFF and turnout gear containing PFAS they designed, marketed, manufactured, distributed, released, promoted, and sold renders the AFFF and turnout gear a defective product.

188. Defendants were negligent in their failure to provide Plaintiff with adequate warnings or instruction that the use of their AFFF products would cause PFAS to be released into the blood and/or body of Plaintiff. As a result of Defendants' conduct and the resulting contamination, Plaintiff suffered severe personal injuries by exposure to AFFF and turnout gear containing PFAS.

189. Defendants' negligent failure to warn directly and proximately caused the harm to and damages suffered by Plaintiff.

WHEREFORE, the Plaintiff prays judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

COUNT III - DESIGN DEFECT

190. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

191. Defendants knew or should have known:

- a) exposure to AFFF and turnout gear containing PFAS is hazardous to human health;
- b) the manner in which AFFF and turnout gear containing PFAS was designed, manufactured, marketed, distributed, and sold was hazardous to human health; and
- c) the manner in which AFFF and turnout gear containing PFAS was designed, manufactured, marketed, distributed, and could and would release PFAS into Plaintiff and cause the exposure and bioaccumulation of these toxic and poisonous chemicals in the blood and/or body of Plaintiff.

192. Knowing of the dangerous and hazardous properties of the AFFF and turnout gear containing PFAS, Defendants could have designed, manufactured, marketed, distributed, and sold alternative designs or formulations of AFFF and turnout gear that did not contain hazardous and toxic PFAS. These alternative designs and formulations were already available, practical, and technologically feasible. The use of these alternative designs would have reduced or prevented reasonably foreseeable harm to Plaintiff caused by the Defendants' design, manufacture, marketing, distribution, and sale of AFFF and turnout gear containing hazardous and toxic PFAS.

193. The AFFF and turnout gear containing PFAS that was designed, manufactured, marketed, distributed, and sold by the Defendants was so hazardous, toxic, and dangerous to human health that the act of designing, formulating, manufacturing, marketing, distributing, and selling this AFFF and turnout gear was unreasonably dangerous under the circumstances.

194. The AFFF designed, formulated, manufactured, marketed, distributed, and sold by Defendants was defectively designed and the foreseeable risk of harm could and would have been reduced or eliminated by the adoption of a reasonable alternative design that was not unreasonably dangerous. Defendants' defective design and formulation of AFFF and turnout gear containing PFAS was a direct and proximate cause of the contamination of the blood and/or body of Plaintiff and the persistence and accumulation of PFAS in Plaintiff's blood and/or body.

195. Defendants' defective design and formulation of AFFF and turnout gear containing PFAS caused the contamination described herein resulting in personal injuries to Plaintiff. As a direct result of the harm and injury caused by Defendants' defective design and the contamination described herein, Plaintiff has been exposed to AFFF and turnout gear containing PFAS and other toxic substances and has developed cancer.

196. Defendants' negligent failure to design reasonably safe products directly and proximately caused the harm to and damages suffered by Plaintiff.

WHEREFORE, the Plaintiff pray judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

COUNT IV - STRICT LIABILITY (STATUTORY)

197. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

198. Plaintiff asserts any and all remedies available under statutory causes of action from Plaintiff's state for strict liability against each Defendant.

199. The Defendants were engaged in designing, manufacturing, marketing, selling, and distribution of AFFF and turnout gear.

200. AFFF and turnout gear were in a defective condition and unreasonably dangerous to users and/or consumers when designed, manufactured, marketed, sold, and/or distributed to the public by the Defendants.

201. As a direct and proximate result of the Defendants products' aforementioned defects, the Plaintiff has been injured, sustained severe and permanent pain, suffering, disability, impairment, loss of enjoyment of life, loss of cure, comfort, economic loss and damages including, but not limited to medical expenses, lost income, and other damages.

202. The Defendants are strictly liable in tort to the Plaintiff for their wrongful conduct.

WHEREFORE, the Plaintiff prays judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

COUNT V - STRICT LIABILITY (RESTATEMENT)

203. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

204. The Plaintiff brings strict product liability claims under the common law, Section 402A of the Restatement of Torts (Second), and/or Restatement of Torts (Third) against Defendants.

205. As designed, manufactured, marketed, tested, assembled, equipped, distributed and/or sold by the Defendants the AFFF and turnout gear products were in a defective and unreasonably dangerous condition when put to reasonably anticipated use to foreseeable consumers and users, including the Plaintiff.

206. The Defendants had available reasonable alternative designs which would have made the AFFF and turnout gear products safer and would have most likely prevented the injuries and damages to the Plaintiff, thus violating state law and the Restatement of Torts.

207. The Defendants failed to properly and adequately warn and instruct the Plaintiff as to the proper safety use of the Defendants' product.

208. The Defendants failed to properly and adequately warn and instruct the Plaintiff regarding the inadequate research and testing of the product.

209. The Defendants' products are inherently dangerous and defective, unfit, and unsafe for their intended and reasonably foreseeable uses, and do not meet or perform to the expectations.

210. As a proximate result of the Defendants' design, manufacture, marketing, sale, and distribution of the products, the Plaintiff has been injured and sustained severe and permanent pain, suffering, disability, impairment, loss of enjoyment of life, loss of care, comfort, and consortium, and economic damages.

211. By reason of the foregoing, the Defendants are strictly liable for the injuries and damages suffered by the Plaintiff, caused by these defects in the AFFF product.

WHEREFORE, the Plaintiff prays judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper,

COUNT VI - FRAUDULENT CONCEALMENT

212. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if rested in full herein.

213. Throughout the relevant time period, Defendants knew that their products were defective and unreasonably unsafe for their intended purpose.

214. Defendants fraudulently concealed from and/or failed to disclose to or warn the Plaintiff, and the public that their products were defective, unsafe, and unfit for the purposes intended, and that they were not of merchantable quality.

215. Defendants were under a duty to the Plaintiff and the public to disclose and warn of the defective and harmful nature of the products because:

- a) Defendants were in a superior position to know the true quality, safety and efficacy of the Defendants' products;
- b) Defendants knowingly made false claims about the safety and quality of the Defendants' product in documents and marketing materials; and
- c) Defendants fraudulently and affirmatively concealed the defective nature of the Defendants' products from the Plaintiff.

216. The facts concealed and/or not disclosed by Defendants to the Plaintiff were material facts that a reasonable person would have considered to be important in deciding whether or not to purchase and/or use the Defendants' products.

217. Defendants intentionally concealed and/or foiled to disclose the true defective nature of the products so that the Plaintiff would use the Defendants' products, the Plaintiff justifiably acted or relied upon, to Plaintiff's detriment, the concealed and/or non-disclosed facts as evidenced by Plaintiff's use of the Defendants' products.

218. Defendants, by concealment or other action, intentionally prevented the Plaintiff from acquiring material information regarding the lack of safety and effectiveness of the Defendants' products and are subject to the same liability to the Plaintiff for Plaintiff's pecuniary losses, as though Defendants had stated the non-existence of such material information regarding the Defendants' products' lack of safety and effectiveness and dangers and defects, and as though

Defendants had affirmatively stated the non-existence of such matters that the Plaintiff was thus prevented from discovering the truth. Defendants therefore have liability for fraudulent concealment under all applicable laws, including, *inter alia*, Restatement (Second) of Torts §550 (1977).

219. As a proximate result of Defendants' conduct, the Plaintiff has been injured, and sustained severe and permanent pain, suffering, disability, impairment, loss of enjoyment of life, loss of care, comfort, and economic damages.

WHEREFORE, the Plaintiff prays judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

COUNT VII – BREACH OF EXPRESS AND IMPLIED WARRANTIES

220. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

221. At all times relevant hereto, the Defendants manufactured, marketed, labeled, and sold the AFFF and turnout gear products that has been previously alleged and described herein.

222. At the time the Defendants designed, developed, marketed, sold, labeled, and distributed the AFFF and turnout gear products, the Defendants knew of the use for which it was intended, and implied and/or expressly warranted that the product was merchantable, safe, and fit for its intended purpose.

223. The Defendants warranted that the product was merchantable and fit for the particular purpose for which it was intended and would be reasonably safe. These warranties were breached, and such breach proximately resulted in the injuries and damages suffered by the Plaintiff.

224. The Plaintiff is within the class of foreseeable users and reasonably relied upon Defendants' judgment, and the implied and/or express warranties in using the products.

225. The Defendants breached their implied and/or express warranties and did not meet the expectations for the performance of the product when used for its intended use and was neither of merchantable quality nor safe for its intended use in that the product has a propensity to cause serious injury, pain, and cancer.

WHEREFORE, the Plaintiff prays judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

COUNT VIII-WANTONNESS

226. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this Complaint as if restated in full herein.

227. Defendants and their employees, agents, officers, and representatives owed a duty of care to end users of their AFFF and turnout gear products, including Plaintiff.

228. Defendants breached the duty of care owed to the Plaintiff.

229. The actions of Defendants and their employees, agents, officers, and representatives were willful and wanton and exhibited a reckless disregard for the life, health, and safety of the end users of Defendants' AFFF and turnout gear products, including Plaintiff.

230. As a proximate and foreseeable consequent of the actions of Defendants, Plaintiff was exposed to unreasonably dangerous toxic PFAS containing AFFF and turnout gear, which caused Plaintiff's injury.

WHEREFORE, the Plaintiff prays Judgments against the Defendants for actual, compensatory, consequential, and punitive damages, together with the costs of this action, and for such other and further relief as this Court may deem fit, just, and proper.

TOLLING OF THE STATUTE OF LIMITATIONS

Discovery Rule Tolling

231. Plaintiff had no way of knowing about the risk of serious injury associated with the use of and exposure to AFFF and turnout gear until very recently.

232. Within the time period of any applicable statute of limitations, Plaintiff could not have discovered, through the exercise of reasonable diligence, that exposure to AFFF and turnout gear is harmful to human health.

233. Plaintiff did not discover and did not know of facts that would cause a reasonable person to suspect the risk associated with the use of and exposure to AFFF and turnout gear; nor would a reasonable and diligent investigation by Plaintiff have disclosed that AFFF and turnout gear could cause personal injury.

234. For these reasons, all applicable statutes of limitations have been tolled by operation of the discovery rule with respect to Plaintiff's claims.

Fraudulent Concealment Tolling

235. All applicable statute of limitations have also been tolled by Defendants knowing and active fraudulent concealment and denial of the facts alleged herein throughout the time period relevant to this action.

236. Instead of disclosing critical safety information regarding AFFF and turnout gear, Defendants have consistently and falsely represented the safety of AFFF and turnout gear products.

237. This fraudulent concealment continues through present day.

238. Due to this fraudulent concealment, all applicable statutes of limitations have been tolled by operation of the discovery rule with respect to Plaintiff's claims.

Estoppel

239. Defendants were under a continuous duty to consumer, end users, and other persons coming into contact with their products, including Plaintiff, to accurately provide safety information concerning its products and the risk associated with the use of and exposure to AFFF and turnout gear.

240. Instead, Defendants knowingly, affirmatively, and actively concealed safety information concerning AFFF and turnout gear and the serious risks associated with the use of and exposure to AFFF and turnout gear.

241. Based on the foregoing, Defendants are estopped from relying on any statute of limitations in defense of this action.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff demands judgment against all Defendants, jointly and severally, on each of the above-referenced claims and Causes of Action as follows:

- Awarding compensatory damages to Plaintiff for past and future damages, including but not limited, to pain and suffering for severe and permanent personal injuries sustained by the Plaintiff, health care costs, medical monitoring, together with interest and costs us provided by law;
- Punitive and/or exemplary damages for the wanton, willful, fraudulent, and/or reckless acts of the Defendants who demonstrated a complete disregard and reckless indifference for the safety and welfare of the Plaintiff and of the general public and to the Plaintiff in an amount sufficient to punish Defendants and deter future similar conduct;

- Awarding Plaintiff attorneys' fees;
- Awarding Plaintiff the costs of these proceedings; and
- Such other and further relief as this Court deems just and proper.

JURY DEMAND

The Plaintiff hereby demands a trial by jury.

DATED: May 25, 2023

Respectfully submitted,

The Plaintiff
By his attorney,

/s/ Paula S. Bliss
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